SSS71 Ck: 135 Len: 32 Aar53571 Spider venom calcium channel	FINDPATTERNS 1 < X {	uns on gen cx{0,6}Cx{	<pre>:RNS on geneseqp:* allowing 0 mismatches <x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	AAY24112
<pre> <x{0,6}cx{5,6}cx{4} (b)="" 1en:="" 3006="" 33="" 3541="" <x{0,6}cx{5,6}cx{4}="" <x{0,6}cx{6,6}cx{4}="" cx:="" cx{6}<="" cx{6}cx{4}="" cx{6}cx{6}cx{4}="" cx{6}cx{6}cx{6}cx{6}="" td="" xcx{6}cx{5}=""><td></td><td>AAR53571</td><td>135 len: 32 ! Aar53571 Spider venom calcium</td><td>1</td></x{0,6}cx{5,6}cx{4}></pre>		AAR53571	135 len: 32 ! Aar53571 Spider venom calcium	1
CK: 3006 len: 33 CX: 6 CX (5, 6) CX (4) (E CX: 3541 len: 33 CX: 6 CX (5, 6) CX (4) (E CX: 8841 len: 27 CX: 6 CX (4) (E CX: 6 CX (5, 6) CX (4) (E CX: 6 CX (5, 6) CX (4) (E CX: 8971 len: 27 CX: 8971 len: 27 CX: 8971 len: 27 CX: 8971 len: 27 CX: 8841 len: 27 CX: 6 CX (4) (E CX (6, 6) CX (5, 6) CX (4) (E CX (6, 6) CX (6		1:	<pre><x{0,6}cx{5,6}cx{4}(e.q)ccx{3,4}cx{3,6}cx{0,9}></x{0,6}cx{5,6}cx{4}(e.q)ccx{3,4}cx{3,6}cx{0,9}></pre>	1: AAY24111
<pre><x(0,6)cx(5,6)cx(4)(e< td=""><td></td><td>AAR53576</td><td></td><td>1</td></x(0,6)cx(5,6)cx(4)(e<></pre>		AAR53576		1
CK: 3541 len: 33 CX { 6 } CX { 6 } CX { 4 } (B) CAEFOSKCKCOSEC CK: 8841 len: 27 CX { 6 } CX { 5 } CX { 4 } (E) CX { 6 } CX { 6 } CX { 4 } (E) CX { 6 } CX { 6 } CX { 4 } (E) CX { 6 } CX { 6 } CX { 4 } (E) CX { 6 } CX { 6 } CX { 4 } (E) CX { 6 } CX { 6 } CX { 4 } (E) CX { 6 } CX { 6 } CX { 4 } (E) CX { 6 } CX { 6 } CX { 4 } (E) CX { 6 } CX { 6 } CX { 4 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 4 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 7 } (E) CX { 6 } CX { 6 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX { 7 } CX { 7 } (E) CX		1:	<pre><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	1: AAY24114
CK: 6 CX (5 CX (4) (E CX (6		AAR55087	3541 len: 33 Aar55087 Tarantula spider	
CK: 8841 len: 27 CX {6} CX {6} CX {4} (E CX {6} CX {4} (E CX {6} CX {4} (E CX {1} CX {2} (E CX {2} CX {4} (E CX {2} CX {2} CX {2} CX {4} (E CX {2} CX {2} CX {2} CX {4} (E CX {2} CX {2} CX {2} CX {4} (E CX {2} C		1;	<pre><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}> Cx{6}Cx{6}Cx{4}(E)CCx{4}Cx{6}Cx{6}Cx{6}</x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	1: AAY24127
<pre><x{0.6}cx{5,6}cx{4}(e,0)ccx{3,4}cx{3,6}cx{0,9},< td=""><td></td><td>AAR70720</td><td>8841</td><td></td></x{0.6}cx{5,6}cx{4}(e,0)ccx{3,4}cx{3,6}cx{0,9},<></pre>		AAR70720	8841	
<pre>ck: 5840 len: 34</pre>		1;	<x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}> CX{6}CX{5}CX{4}(E)CCX{3}CX{4}CX{3} CXTYSKYCBADSECCTEQCVRSYCTLF</x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}>	1: AAX24130
<pre><x (e,="" 0)="" 0,="" 3,="" 4="" 5,="" 6="" 9="" ccx="" cx="" {="" }=""></x></pre>		AAY24108	5840 len: 34 ! Aay24108 Conopeptide Tx6.4.	
<pre>ck: 8971 len: 27</pre>		1:	<pre><x{0,6}cx{5,6}cx{4}(e.q)ccx{3,4}cx{3,6}cx{0,9}></x{0,6}cx{5,6}cx{4}(e.q)ccx{3,4}cx{3,6}cx{0,9}></pre>	1: AAY24109
<pre><x{0,6}cx{5,6}cx{4} (e,q)ccx{3,4}cx{3,6}cx{0,6}="" cxx{6}cx{1}cx{1}cx{1}cx{1}cx{1}cx{1}cx{1}cx{1<="" td=""><td></td><td>AAY24131</td><td>8971 len: 27 ! Aay24131 Gamma-conopeptide</td><td>1</td></x{0,6}cx{5,6}cx{4}></pre>		AAY24131	8971 len: 27 ! Aay24131 Gamma-conopeptide	1
<pre>ck: 8841 len: 27</pre>		1:	<x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}> CX{6}CX{4}(E)CCX{3}CX{4}CX{3}CX{4}CX{3} CGGYSTYCEVDSECCSDNCVRSYCTLF</x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}>	1: AAY87532
<pre><x{0,6}cx{5,6}cx{4} (e,0)ccx{3,4}cx{3,6}cx{0,6}="" cxx{6}cx{1}cx{1}cx{1}cx{1}ex{1}ex{1}ex{1}ex{1}ex{1}ex{1}ex{1}e<="" td=""><td></td><td>AAY24110</td><td>8841 len: 27 ! Aay24110 Conopeptide J101.</td><td></td></x{0,6}cx{5,6}cx{4}></pre>		AAY24110	8841 len: 27 ! Aay24110 Conopeptide J101.	
<pre>ck: 9467 len: 32</pre>		ï	<pre><x{0,6}cx{5,6}cx{4}(e,0)ccx{3,4}cx{3,6}cx{0,9}> CX{6}CX{4}(E)CCX{3}CX{4}CX{3} CXTYSKYCEADSECCTEQCVRSYCTLF</x{0,6}cx{5,6}cx{4}(e,0)ccx{3,4}cx{3,6}cx{0,9}></pre>	1: AAY87530
<pre><x{0,6}cx{5,6}cx{4}\(e,q)ccx{3,4}cx{3,6}cx{4}\\< td=""><td></td><td>AAY24113</td><td>9467 len: 32 ! Aay24113 Conopeptide Gm6.7.</td><td>1</td></x{0,6}cx{5,6}cx{4}\(e,q)ccx{3,4}cx{3,6}cx{4}\\<></pre>		AAY24113	9467 len: 32 ! Aay24113 Conopeptide Gm6.7.	1
<pre>ck: 8902 len: 27</pre>		1;	<pre><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	1: AAU05930
<pre><x{0,6}cx{5,6}cx{4}\{e,q)ccx{3,4}cx{3,6}cx{0,} cx{6}cx{4}\{e,cx{3}\{cx{4}\{cx{3}\}cx{4}\}cx{3}\}="" cx{6}cx{4}\{e,cx{3}cx{4}\{cx{3}}\}="" cx{6}cx{6}cx{6}cx{6}cx{6}cx{6}cx{6}cx{6}<="" td=""><td></td><td>AAY24115</td><td>8902 len: 27 ! Aay24115 Conopeptide Mr6.2.</td><td></td></x{0,6}cx{5,6}cx{4}\{e,q)ccx{3,4}cx{3,6}cx{0,}></pre>		AAY24115	8902 len: 27 ! Aay24115 Conopeptide Mr6.2.	
<pre>ck: 385 len: 32 ! Aay24107 Conopeptide <x{0,6}cx{5,6}cx{4} (e,0)ccx{3,4}cx{3,6}cx{0,6}cx{3,4}cx{3,6}cx{0,6}cx<="" td=""><td></td><td>1:</td><td><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}> CX{6}CX{4}(E)CCX{3}CX{4}CX{3}CX{3} CGGWSTYCEVDEECCSESCVRSYCTLF</x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></td><td>1: AAU05972</td></x{0,6}cx{5,6}cx{4}></pre>		1:	<x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}> CX{6}CX{4}(E)CCX{3}CX{4}CX{3}CX{3} CGGWSTYCEVDEECCSESCVRSYCTLF</x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}>	1: AAU05972
		AAY24107	385 len: 32 ! Aay24107 Conopeptide	
		1:	<x{0, 6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx(0,9}=""> XCX(6)CX(4)(E)CCX{3}CX{4}(CX{7}) DCTSWFGRCTVNSECCSNSCDQTYCELYAPPS</x{0,>	I: AAU06037

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! Aay87532 Mature conotoxin peptide #7. 7/20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ! Aay87530 Mature conotoxin peptide #6. 7/20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ! Aay24130 Gamma-conopeptide PvVIIA. 8/2003
                                                                                                                                                                                                                                                                                                                                                                                         \frac{\vec{x}}{2} 1 Aay24127 Gamma-conopeptide Tx6.1. 9/1999
! Aay24112 Conopeptide Tx6.5. 9/1999
                                                                                                                                     ! Aay24111 Conopeptide Tx6.6. 9/1999
                                                                                                                                                                                                                                                                          ! Aay24114 Conopeptide Mr6.1. 9/1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ! Aay24109 Conopeptide Tx6.9. 9/1999
                                  <X{0,6}CX{5,6}CX{4}(E,0)CCX{3,4}CX{3,6}CX{0,9}>
xCx{6}Cx{4}(E)CCx{3}Cx{4}(cx
LCPDYTEPCSHAHECCSWNCYNGHCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <X{0,6}CX{5,6}CX{4}(E,0)CCX{3,4}CX{3,6}CX{0,9}>
    x{6}CX{6}CX{4}(E)CX{3}CX{4}(X{9})
    wwwGGCMAWFGLCSRDSECCSNSCDVTRCELMPFPPDW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <x{0,6}CX{5,6}CX{4}(E,Q)CCX{3,4}CX{3,6}CX{0,9}>
CX{6}CX{4}(C)CCX{3}CX{3}CX
CYDSGTSCNTGNQCCSGWCIFVCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <X{0,6}CX{5,6}CX{4}(E,0)CCX{3,4}CX{3,6}CX{0,9}>
CX{6}CX{4}(C)CCX{3,4}CX
CYGGTSCDSGIQCCSGWCIFVCF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ck: 385 len: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ck: 2221 len: 24
ck: 6937 len: 31
                                                                                                                                     ck: 4267 len: 34
                                                                                                                                                                                                                                                                          ck: 2999 len: 29
                                                                                                                                                                                                                                                                                                                                                                                                                  ck: 6382 len: 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ck: 9205 len: 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ck: 2573 len: 24
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ck: 2321 len: 24 ! Aau05930 Cone snail O-superfamily conotoxi

<x{0,6}CX{5,6}CX{4}(E,0)CCX{3,4}CX{3,6}CX{0,9}>
CX{6}CX{4}(C)CX{3,4}CX
CXBGTSCNTGNQCCSGXCIFLCL

! Aau05972 Cone snail O-superfamily conotoxi

ck: 7712 len: 27

<x{0,6}Cx{5,6}Cx{4}(E,0)CCx{3,4}Cx{3,6}Cx{0,9}>
xCx{6}Cx{6}(Cx{3}Cx{3}Cx{3}Cx
xC1XSGDLCFRSDHIQCSGKCAFVCL

! Aau06037 Cone snail O-superfamily conotoxi

ck: 6262 len: 31

N

	<x{0,6}cx{5,6}cx{4}(e,0)ccx{3,4}cx{3,6}cx{0,9}></x{0,6}cx{5,6}cx{4}(e,0)ccx{3,4}cx{3,6}cx{0,9}>	1:	
1:	x{5}Cx{6}Cx{6}(0)CCx{3}Cx{3}Cx NRLSRCIPSGDLCFPSDHIQCCSAKCAFVCL	AAU06039	39 ck:
AAU06044	ck: 5060 len: 26 Aau06044 Cone snail O-superfamily conotoxin	ı)}x>
1:	<pre><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}> Cx{6}Cx{6}Cx{3}Cx{3}Cx Cxx6DLCPxSDHQCCNAKCAPACL</x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	1: AAU06040	40 ck:
AAU06047	ck: 6984 len: 31 Aau06047 Cone snail O-superfamily conotoxin	1)}x>
1:	X{5,6}CX{4}(E,Q)CCX{3,4}CX{3,6}CX{6 X{5}CX{6}(Q)CCX{3}CX{3}CX NRLSWCIPTGDLCPSDHIQCCSGKCTFVCM	1: AAU05922	22 ck:
AAU06048	ck: 8247 len: 27 Aau06048 Cone snail O-superfamily conotoxin	,)}x>
1;	<pre><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}> xCx{6}Cx{6}(Cx{3}Cx{3}Cx xCxTGDLCFxSDHIQCCSGKCTFVCM</x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	1: AAU05980	80 ck:
AAU05953	ck: 9409 len: 32 ! Aau05953 Cone snail O-superfamily conotoxin	r.)}x>
ä	<pre><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	1: AAU06002	02 ck:
AAU06033	ck: 6147 len: 31 Aau06033 Cone snail O-superfamily conotoxin) **
ä	<pre><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}> x{5,0x{6,0x{6}(Q)CCx{3}Cx{3}Cx}3}Cx nRLSRCIPSGDLCFPSDHIQCCNARCAFVCL</x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	1: AAU06020	120 ck:
00000		-)}x>
850800W	x(4)(E,Q)CCX(3,4)CX(3,6)CX(0	1;	
1:	CIXSGDLCFXSDHIQCCSAKCAFVCL	AAU05924	
AAU06046	<pre>ck: 7563 len: 27 ! Aau06046 Cone snail O-superfamily conotoxin <x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	; ;	-} **
1:	xCx{6}Cx{6}Cx{3}Cx{3}Cx xC1XSGDLCFXSDHIQCCNAKCAFVCL	AAU05971	
AAU06052	ck: 7832 len: 27 Aau06052 Cone snail O-superfamily conotoxin	1 1:	}x>
;;	<pre><x{0,6}cx{5,6}cx{4}(c,q)ccx{3,4}cx{3,6}cx{0,9}> xCx{6}Cx{6}(Q)CCx{3}Cx{3}Cx{3}Cx xCxx{6}Cxx{6}Cxx{6}Cxx{6}Cx{6}Cx{6}Cx{6}</x{0,6}cx{5,6}cx{4}(c,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	AAU06045	
AAU06019	ck: 2540 len: 29 ! Aau06019 Cone snail O-superfamily conotoxin איז פוראנו ביואר ביואר באר באר באר באר באר באר באר באר באר ב	;; ;;	(x)
1:	x{3}Cx{6}Cx{6}(0)Ccx{3}Cx x{3}Cx{6}Cx{6}(0)Ccx{3}Cx LRWCIPRGDLCFPSDRIQCCSGRCTFVCM	AAU05932	332 ck:
AAU06036	ck: 7658 len: 27 ! Aau06036 Cone snail O-superfamily conotoxin	1 1:	}x>
	<x{0,6}cx{5,6}cx{4} (e,q)ccx{3,4}cx{3,6}cx{0,9}=""> xCx{6}Cx{6}Cx{5}(Q)CCx{3}Cx{3}Cx{3}Cx</x{0,6}cx{5,6}cx{4}>		

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! Aau06039 Cone snail O-superfamily conotoxin
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ! Aau05924 Cone snail O-superfamily conotoxir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ! Aau06045 Cone snail O-superfamily conotoxiv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ! Aau05932 Cone snail O-superfamily conotoxi
                                                                                                                                                                                              ! Aau06040 Cone snail O-superfamily conotoxin
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ! Aau05971 Cone snail O-superfamily conotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      {0,6}CX{5,6}CX{4}(B,C)CCX{3,4}CX{3,6}CX{0,9}>
x{5}CX{6}CX{6}(C)CCX{3}CX{3}CX
NRLSWCIPSGDLCFPSDHIQCCNAKCAFVCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 {0,6}CX{5,6}CX{4}(E,Q)CCX{3,4}CX
CX{6}CX{4}(Q)CCX{3,CX
CXGGTGCDSGNQCCSGXCIFVCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              {0,6}CX{5,6}CX{4}(E,Q)CCX{3,4}CX(3,6}CX{0,9}>
CX{6}CX{4}(Q)CCX{3}CX{4}CX
CXDSGTSCNTGNQCCSGXCIFVSCL
                                                                                                                                                                                                                                     {0,6}cx{5,6}cx{4}(E,0)ccx{3,4}cx{3,6}cx{0,9}>
cx{6}cx{6}cx{6}(0)ccx{3,4}cx
cixsgdlcFxSDHQCCNAXCAFVCL
                                                                                                                                                                                                                                                                                                                                                                            {0,6}CX{5,6}CX{4}(E,Q)CCX{3,4}CX{3,6}CX{0,9}>
CX{6}CX{4}(Q)CCX{3}CX
CXDGGTGCDSGNQCCSGXCIFACL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    {0,6}CX{5,6}CX{4}(C,0)CCX{3,4}CX{3,6}CX{0,9}>
CX{6}CX{4}(C)CCX{3}CX
CXSGTSCNTGNQCCSGXCIFVCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      XCIXSGDLCFXSDHIQCCSAKCAFVCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      : 2357 len: 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : 1909 len: 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : 6172 len: 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : 4641 len: 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : 8377 len: 27
                                                                                                                                                                                                  : 5824 len: 26
                                                                                                                                                                                                                                                                                                                                          : 1895 len: 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 : 2589 len: 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : 8003 len: 27
                                                         5997 len: 31
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	•			
	AAU06034	ck: 5564 len: 26 ! Aau06034 Cone snail O-superfamily conotoxin	•	
1	÷	<x{0,6}cx{5,6}cx{4} (b,q)ccx{3,4}cx{3,6}cx{0,9}=""> CX{6}CX{6}(Q)CX{3}CX{3}CX</x{0,6}cx{5,6}cx{4}>		-
	 1	CIASGULCFASDHIQCCNAKCAFVCL	ABB88895	ç Ç
	AAU06035	ck: 6287 len: 31 Aau06035 Cone snail O-superfamily conotoxin)}x>
1		$< x\{0,6\}Cx\{5,6\}Cx\{4\}\{E,Q\}CCx\{3,4\}Cx\{3,6\}Cx\{0,9\}>$::	
	1:	x{5}Cx{6}Cx{6}Cx23CCx{3}Cx NRLSWCIPSGDLCFPSDHIQCCSAKCAFVCL	ABB88903	ck:
	AAU06043	ck: 5538 len: 31 ! Aau06043 Cone snail O-superfamily conotoxin) **
г ч			ä	
	ij	NRLSRCÍ PSGDĽCFPSDHIQCCNAKCAFACL	ABB88896	с <u>к</u> ::
	ADC21243	ck: 2431 len: 33 ! Adc21243 Selenocosmia huwena HWAP-I polypep	,) **
п	•	$< X\{0, 6\} CX\{5, 6\} CX\{4\} (E, Q) CCX\{3, 4\} CX\{3, 6\} CX\{0, 9\} > XCX\{6\} CX\{6\} CX\{4\} C$	 -	•
	:	ACROVE DACLE GONDECCENTACODABANCANAL	ABB88901	: X
	ABB88893	ck: 4784 len: 30 ! Abb88893 Conus virgo I-superfamily conotoxi	-	,
п	÷	<pre><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}> Cx{6}Cx{4}(Q)CCx{3}Cx{4}Cx{6}</x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	L:	4
			АББВВВУУ	ü.
	ABB88886	1 ck: 7477 len: 31 ! Abb88886 Conus emaciatus I-superfamily cond		۶ ک
гđ	٠	$< x\{0, 6\} Cx\{5, 6\} Cx\{4\} (E, Q) CCx\{3, 4\} Cx\{3, 6\} Cx\{0, 9\} >$	1:	
	1:	$Cx\{6\}Cx\{4\}\{0,CX\{4\}Cx\{7\}\}$ CRREGSSCRRSYQCCRKSCCIGECEFFCRWV	ABB88897	çk:
				۰) د×(٥
	ABB88902	3 3	1:	
-1		<pre><a(u, (a)="" (a,="" (a<="" (e)="" ca(f)="" ca(s)="" e)="" f)="" q)="" td=""><td></td><td></td></a(u,></pre>		
ı	:: -	CHHEGLPCTSGDGCCGMECCGGVCSSHCGN	AA015120	ck:
	ABB88833	ck: 4508 len: 38 Abb88833 Conus lynceus I-superfamily conotc		0}x>
гŧ		$< x\{0,6\} cx\{5,6\} cx\{4\} (E,Q) ccx\{3,4\} cx\{3,6\} cx\{0,9\}>$	1:	
	1:	X(4)CX(6)CX(4)(E)CCX(3)CX(9) NWSWCSGSGEGCDYHSECCGERCCIESMCIGDGVACWP	AA015121	ck:
	ABB88909	ck: 4452 len: 30 ! Abb88909 Conus striolatus I-superfamily con		0}x>
1			1:	
	1:	$Cx\{6\}Cx\{9\}(E)CCx\{3\}Cx\{2\}$ CHHEGLPCSSDDGCCGMECCNGVCSSSCGN	ABG99363	ς κ:
	2000000			0)x>
-		1/04 Tem: 30	1:	
1	1:	Cx(6)Cx(4)(Q)Cx(3)X(4)Cx(6) Cx(6)Cx(4)(Q)Cx(3)X(4)Cx(6) CLHETSPCRRSFQCCHGICCFRRCSNSCRF	ABG99520	상:
	00000000			0}x>
1	222		1:	

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! Abb88903 Conus figulinus I-superfamily con
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ! Aao15120 Agriosphodrus dohrni (assassin bu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ! Aao15121 Isyndus obscurus (assassin bug) c
                                                                                                               ! Abb88895 Conus virgo I-superfamily conotox
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ! Abg99520 Conus sp conotoxin-associated pep
                                                                                                                                                                 {0,6}CX{5,6}CX{4}(E,0)CCX{3,4}CX{3,6}CX{0,9}>
CX{6}CX{4}(Q)CCX{3}CX{4}CX{6}
CLHETPPCRRSFQCCHGNCCFRRCSNSCRF
                                                                                                                                                                                                                                                                                                                                                              {0,6}Cx{5,6}Cx{4}(E,Q)CCX{3,4}Cx{3,6}CX{0,9}>
Cx{6}Cx{9}(E)CCx{3}Cx{3}Cx{2}
CHHEGLPCASDDGCCGMECCGGVCSSHCGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             {0,6}CX{5,6}CX{4}(B,O)CCX{3,4}CX{3,6}CX{0,9}>
CX{6}CX{4}(Q)CCX{3}CX{4}CX{6}
CLHETSPCGRSFQCCHGICCFRRCSNSCRF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,6}CX{5,6}CX{4}(E,Q)CCX{3,4}CX{3,6}CX{0,9}> x{4}CX{6}CX{5}(Q)CCX{4}CX{6}CX{3} ADDDCLPRGSKCLGENKQCCKGTTCMFYANRCVGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,6)CX{5,6}CX{4}(B,Q)CCX{3,4}CX{3,6}CX{0,9}>
CX{6}CX{4}(Q)CCX{3}CX{4}CX{7}
CRAEGVYCEYGSQCCLSQCCMASCANPCRHP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,6)cx(5,6)cx(4)(B,0)ccx(3,4)cx(3,6)cx(0,9)>

Cx(6)cx(9)(B)Ccx(3)cx(3)cx(2)

CHHEGLPCTSDDGCCGMECCGGVCSSHCGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,6)CX{5,6}CX{4}(E,O)CCX{3,4}CX{3,6}CX{0,9}>
CX{6}CX{4}(C)CCX{3}CX{4}CX{6}
CLYETSPCRRSFQCCHGICCFRRCSNSCRF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      [0,6]CX[5,6]CX[4][B,O]CCX[3,4]CX[3,6]CX[0,9]>
X[5]CX[6]CX[5][O]CCX[4]CX[6]CX[3]
GADEDCLPRGSKCLGENKQCCEKTTCMFYANRCVGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (0,6)cx{5,6}cx{4}(E,0)ccx{3,4}cx{3,6}Cx{0,9}>
x{5}cx{6}cx{6}Cx{4}(0)ccx{3}cx{5}cx{6}
xrxgsctsxlatctqpqqcctdvcxrrdxcalxddr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cx\{6\}Cx\{4\}(Q)CCx\{3\}Cx\{4\}Cx\{7\}
CRAEGVRCEFDSQCCESECCMGSCANPCRIP
                                                                                                               : 4856 len: 30
                                                                                                                                                                                                                                                                                                               : 3846 len: 30
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4835 len: 30
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9883 len: 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   613 len: 36
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ABG99519		1 1:	<pre><x{0,6}cx{5,6}cx{4}(b,q)ccx{3,4}cx{3,6}cx{0,9}> Cx{6}CX{4}(Q)CCX{3}CX{4}CX{7} CITLGTRCKVXSQCCRSSCKNGRCAXSXXXX</x{0,6}cx{5,6}cx{4}(b,q)ccx{3,4}cx{3,6}cx{0,9}></pre>
1:	<x{0,6}cx{5,6}cx{4}(b,q)ccx{3,4}cx{3,6}cx{0,9}> x{4}CX{6}CX{4}(Q)CCX{3}CX{3}CX{4} LWSDCYSWLGSCIAPSQCCSEVCDYYCRLWR</x{0,6}cx{5,6}cx{4}(b,q)ccx{3,4}cx{3,6}cx{0,9}>	ABB9	ABB96884 ck: 8653 len: 27 ! Abb96884 Omega-conopeptide Ra6.3 toxin seqn
ABG99674		1 1:	<pre><x{0,6}cx{5,6}cx{4}(c)ccx{3,4}cx{3,6}cx{0,9}> Cx{6}Cx{4}(C)CCx{3}Cx{6}Cx Cxx{6}Cx{4}(C)CCx{3}Cx{6}Cx CNARNSGCSQHPQCCSGSCNKTLGVCL</x{0,6}cx{5,6}cx{4}(c)ccx{3,4}cx{3,6}cx{0,9}></pre>
1:	AT S S C S S S S S S S S S S S S S S S S	ABB9	ABB96780 ck: 8749 len: 27 Abb96780 Omega-conopeptide Ra6.3 generic to
ABG99681	ck: 9467 len: 32 ! Abg99681 Conus sp conot	1 1:	<x{0,6}cx{5,6}cx{4}(c)ccx{3,4}cx{3,6}cx{0,9}> CX{6}CX{4}(C)CCX{3}CXX{6}CX CNARNSGCSGNCTLGVCL</x{0,6}cx{5,6}cx{4}(c)ccx{3,4}cx{3,6}cx{0,9}>
1:	<pre><x{0,6}cx{5,6}cx{4}(b,q)ccx{3,4}cx{3,6}cx{0,9}></x{0,6}cx{5,6}cx{4}(b,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	ABB9	ABB96882 ck: 8346 len: 27 ! Abb96882 Omega-conopeptide Ra6.1 toxin sequ
ABG99679		т :г	<x{0,6}cx{5,6}cx{4}(c)ccx{3,4}cx{3,6}cx{0,9}> CX{6}CX{4}(C)CCX{3}CXX{6}CX CNARNDGCSQHSQCCSGSCNKTAGVCL</x{0,6}cx{5,6}cx{4}(c)ccx{3,4}cx{3,6}cx{0,9}>
1:	<x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}> CX{6}CX{4}(E)CCX{3}CX{4}CX{3} CSSWAKYCEVDSECCSEQCVRSYCAMW</x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}>	ABB9	96820 ck: 8422 len: 31 Abb96820 Omega-conopeptide Bu6.2 toxin sequ
ABG99678	3 ck: 6025 len: 26 Abg99678 Conus sp conotoxin-associated pept	1	$\langle x\{0,6\}Cx\{5,6\}Cx\{4\}(E,Q)CCx\{3,4\}Cx\{3,6\}Cx\{0,9\}\rangle$ $Cx\{6\}Cx\{4\}(Q)CCx\{3\}Cx\{4\}Cx\{7\}Cx\{7\}Cx\{7\}Cx\{7\}Cx\{7\}Cx\{7\}Cx\{7\}Cx\{7$
ij	<x{0,6}cx{5,6}cx{4}(c,0)ccx{3,4}cx{3,6}cx{0,9}> xCx{6}CXx4}(C)CCX{3}CX{4}CX LCPDYTEPCSHAHECCSWNCHNGHCT</x{0,6}cx{5,6}cx{4}(c,0)ccx{3,4}cx{3,6}cx{0,9}>		6689
ABG99676	5 ck: 8797 len: 39 ! Abg99676 Conus sp conotoxin-associated pept	1	$\langle x\{0,6\}CX\{5,6\}CX\{4\}(E,Q)CCX\{3,4\}CX\{3,6\}CX\{0,9\}\rangle$ $CX\{6\}CX\{4\}(Q)CCX\{3\}CX\{4\}CX\{7\}$ CTTLCTPCXVDSQCCXNGPQASPRW
ä	<x{0,6}cx{5,6}cx{4}(c,0)ccx{3,4}cx{3,6}cx{0,9}> x{6}CX{5}CX{6}CCX{3}CX{4}CX{4}CX{9} wwrwggCmawFGXCSXDSCDITRCELMRFPPDW</x{0,6}cx{5,6}cx{4}(c,0)ccx{3,4}cx{3,6}cx{0,9}>		6779
ABG99673	ck: 6848 len: 31 Abg99673 Conus sp conotoxin-associated pept		<pre><x{0,6}cx{5,6}cx{4}(d)ccx{3,4}cx{3,6}cx{0,9}> CX{6}CX{4}(D)CCX{3}CX{6}CX Cxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx</x{0,6}cx{5,6}cx{4}(d)ccx{3,4}cx{3,6}cx{0,9}></pre>
1:	$< X\{0,6\}CX\{5,6\}CX\{4\}(E,Q)CCX\{3,4\}CX\{3,6\}CX\{0,9\}> x\{5\}Cx\{6\}Cx\{4\}(E)CCx\{3\}Cx\{3\}Cx\{3\}Cx\{3\}Cx\{3\}Cx\{3\}Cx\{3\}Cx\{3$	ABBS	ABB96778 ck: 8346 len: 27 Abb96778 Omega-conopeptide Ra6.1 toxin sequ
ABG99689			<pre><x{0,6}cx{5,6}cx{4}(c)ccx{3,4}cx{3,6}cx{0,9}> CX{6}CX{4}(C)CCX{3}CX{6}CX CNABDINGCOGGCCNYTAGVCT.</x{0,6}cx{5,6}cx{4}(c)ccx{3,4}cx{3,6}cx{0,9}></pre>
ä	<pre><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>		898 ck: 2431
ABB96715	s ck: 9600 len: 31 Abb96715 Omega-conopeptide Bu6.2 generic to	1	<pre><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>
1;	<x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}> CX{6}CX{4}(Q)CCX{3}CX{4}CX CITXGTACKVXSQCCRGXCKNGRCTXSXSXX</x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}>	ADS	ADS31829 ck: 2431 len: 33 Ads31829 Selenocosmia huwena spider venom :
ABB96883	3 ck: 8400 len: 27 ! Abb96883 Omega-conopeptide Ra6.2 toxin sequ	1	<pre><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>
1:	<pre><x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}> CX{6}CX{4}(Q)CCX{3}CX{6}CX CXABCCSQHPQCCSGSCNKTAGVCL</x{0,6}cx{5,6}cx{4}(e,q)ccx{3,4}cx{3,6}cx{0,9}></pre>	Databases searched EMBL, Relea	0
ABB96798	3 ck: 9455 len: 31 Abb96798 Omega-conopeptide Vi6.1 generic to	Total finds: Total length:	s: h: 457,216,429

2,589,679 08:01.25

Total sequences: CPU time:

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Wed Feb 21 10:04:12 2007

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The peptide is useful in blocking Ca channels in cells, such as cells in the nervous system of a mammal, in the treatment of Ca channel-mediated diseases and conditions (e.g. angina, hypertnesion, cardiomyopathy, supraventricular arrhythmias, esophogeal achalasia, premature labor and Raynaud's disease. The peptides are obtained from the spider through the process of milking by electrical stimulation. (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                                                                                                                                                                                  Calcium channel-blocking polypeptide(s) from heteropoda venatoria venom used to treat e.g. angina, hypertension, cardiomyopathies, etc. and for invertebrate pest control.
                                                                                                                                  'enom; calcium channel blocking protein; calcium-antagonist;
hypertension; cardiomyopathy; pesticide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Check: 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Type: P
                                                                                                          Spider venom calcium channel blocking peptide AU-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20, 2007 16:53
                                                                                                                                                                                                                                                                                                                                                  Volkmann RA;
             AAR53571 standard; peptide; 32 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 5; Page 19; 31pp; English.
                                                                                                                                                                                                                                                                93WO-US007555
                                                                                                                                                                                                                                                                                           92US-00970333
                                                                                                                                                                                                                                                                                                                                                  Saccomano NA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    February
                                                                 (revised)
(first entry)
                                                                                                                                                                              Heteropoda venatoria
                                                                                                                                                                                                                                                                                                                                                                             WPI; 1994-167384/20.
                                                                                                                                                                                                                                                                                                                       INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAR53571 Length: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 32 AA;
                                                                                                                                                                                                                                                                                                                     (PFIZ ) PFIZER
                                                                                                                                       venom;
!! AA SEQUENCE 1.0
                                                                                                                                                                                                                                                                                          30-OCT-1992;
                                                                                                                                                                                                                                                                                                                                                 Kelbaugh PR,
                                                                                                                                                                                                        WO9410195-A1
                                                                                                                                                                                                                                                              16-AUG-1993;
                                                                 25-MAR-2003
29-NOV-1994
                                                                                                                                                                                                                                    11-MAY-1994
                                       AAR53571;
                                                                                                                                                     angina;
                                                                                                                                  Spider
```

Spider venom calcium channel blocking peptide KJ-5. LOSTIWHY CF TDQSECTION KCSRQLCKYV ID SEQUENCE 1.0 AAR53576 standard; peptide; 33 AA. (first entry) (revised) 25-MAR-2003 29-NOV-1994 AAR53576; _

Spider venom; calcium channel blocking protein; calcium-antagonist; angina; hypertension; cardiomyopathy; pesticide.

Heteropoda venatoria

WO9410195-A1

11-MAY-1994

93WO-US007555 16-AUG-1993;

92US-00970333 30-OCT-1992;

(PFIZ) PFIZER INC

Volkmann RA; Saccomano NA, Kelbaugh PR,

WPI; 1994-167384/20

Calcium channel-blocking polypeptide(s) from heteropoda venatoria venom used to treat e.g. angina, hypertension, cardiomyopathies, etc. and for invertebrate pest control.

Claim 25; Page 22; 31pp; English.

The peptide is useful in blocking Ca channels in cells, such as cells in the nervous system of a mammal, in the treatment of Ca channel-mediated diseases and conditions (e.g. angina, hypertnesion, cardiomyopathy, supraventricular arrhythmias, esophogeal achalasia, premature labor and Raynaud's disease. The peptides are obtained from the spider through the process of milking by electrical stimulation. (Updated on 25-MAR-2003 to correct PN field.)

Sequence 33 AA;

AAR53576 Length: 33 February 20, 2007 16:53 Type: P Check: 3006

DOSTIWHY OG IDQSECCEGW KCSRQLCKYV IDW

!!AA_SEQUENCE 1.0 ID AAR55087 standard; peptide; 33 AA. (revised)
(first entry) (revised) 27-AUG-2003 25-MAR-2003 31-OCT-1994 AAR55087;

Tarantula spider venom peptide.

Calcium channel blocker; invertebrate pest control; angina; hypertension; cardiomyopathies; supraventricular arrhythmices; oesophageal achalasia; premature labour; Raynaud's disease; physiology.

Theraphosidae. WO9410196-A1

11-MAY-1994.

93WO-US009069 28-SEP-1993;

92US-00973323 03-NOV-1992;

(PFIZ) PFIZER INC. (NPSP-) NPS PHARM INC.

Volkmann RA Saccomano NA, Phillips D, Nason DM,

WPI; 1994-167385/20

the Calcium channel blocking polypeptide(s) from spider venom - useful in control of invertebrate pests and in treatment of angina, hypertension etc. in mammals.

Claim 1; Page 19; 29pp; English.

The polypeptide is one of a number isolated from tarantula spider venom. The peptides are useful as calcium channel blockers in cells and are also diseful in the contol of invertebrate peets and in the treatment of diseases and conditions mediated by calcium channel function. The peptides amy also be used in the study of the physiology of cells, e.g. miscular and cardiovascular cells. See also AARS5085-93. (Updated on 25-MAR-2003 to correct OS field.)

Sequence 33 AA

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This conotoxin peptide may be a member of the known class of omegaconotoxins. This class of conotoxins target and block the presynaptice neuronal calcium ion channels. The conotoxin peptides are useful as pesticides, and many of them or closely related analogues are targeted specific insects or other pests. (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conotoxin peptide(s) containing one or more cyclising di:sulphide inhibit synaptic transmissions at neuromuscular junctions, useful binding assays and as pesticides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Type: P Check: 8841
 Type: P Check: 3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hopkins CE;
                                                                                                                                                     New omega Conotoxin peptide which binds a specific receptor.
                                                                                                                                                                              conotoxin; inhibitor; synaptic transmission; class alpha; neuromuscular junction; nicotinic acetylcholine receptor.
                                                                                                                                                                                                                                                                                               note= "Gla (gamma-carboxyglutamate)"
                                                                                                                                                                                                                                                                        'note= "Gla (gamma-carboxyglutamate)"
                                                                                                                                                                                                                                                                                                                        note= "Gla (gamma-carboxyglutamate)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Abogadie F,
February 20, 2007 16:53
                      CAEFOSKOCK DSECTLES SPTWKKOVYP SPF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (SALK ) SALK INST BIOLOGICAL STUDIES (UTAH ) UNIV UTAH RES FOUND.
                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cruz LJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CKTYSKYCEA DSECCTEQCV RSYCTLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             standard; peptide; 34 AA.
                                                 !!AA_SEQUENCE 1.0
ID _AAR70720 standard; peptide; 27 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 18; Page 51; 56pp; English
                                                                                                                                                                                                                                                                                                                                                   /note= "Phe-NH2
                                                                                                                                                                                                                                                                                                                                                                                                                                                       93US-0008484B
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                                                                                                                              (first entry)
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Dykert J, Torres JL;
                                                                                                                  (revised)
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 AAR55087 Length: 33
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 27 AA;
                                                                                                                                                                                                                                                          Modified-site
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                                                                                                                25-MAR-2003
25-SEP-1995
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                                                                                                                                                                                                                      Synthetic
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AAY24108
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Gamma-carboxylated conopeptides used as, e.g. neuronal pacemaker calcium
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        Conopeptide, gamma-conopeptide, venom, cone snail; cation channel; epilepsy, pacemaker; heart muscle, neuronal pacemaker calcium channel.
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                                                                                                                                                     gamma-carboxyglutamic acid"
                                                                                                                                                                                                             'note= "optionally gamma-carboxyglutamic acid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Burlingame AL, Olivera BM, Walker
Cruz LJ, Imperial J, Colledge C;
                                                                                                                          'note= "optionally 6-bromo-Trp"
                                                                                                                                                                                  note= "optionally 6-bromo-Trp"
                                                                                                                                                                                                                                           note= "optionally hydroxy-Pro"
                                                                                                                                                                                                                                                                      'note= "optionally hydroxy-Pro"
                                                                                                                                                                                                                                                                                                    /note= "optionally 6-bromo-Trp"
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                                                                                            Location/Qualifiers
                                                                                                                                                     'note= "optionally
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ID AAY24131 standard; peptide; 27
                                                                                                                                                                                                                                                                                                                                                                                        98WO-US026792
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(UYVR-) UNIV VRIJE.
(REGC ) UNIV CALIFORNIA.
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                                                                                                             Misc-difference
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                                                    Conus textile.
                                                                                                                                        Modified-site
                                                                                                                                                                                              Modified-site
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                                                                    Synthetic
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neuronal pacemaker calcium

e.g.

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Olivera BM, Walker I J, Colledge C;

Burlingame AL, Oliv cuz LJ, Imperial J,

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Conopeptide, gamma-conopeptide, venom, cone snail; cation channel, epilepsy, pacemaker; heart muscle, neuronal pacemaker calcium channel.
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                                                                                                                                                                               Disclosure; Page 55; 61pp; English.
                                                                                                                                                                                                                                                                                                                    CGGYSTYCEV DSECCSDNCV RSYCTLF
                                                                                                                                                                                                                                                                                                                                   !!AA_SEQUENCE 1.0
ID AAY24110 standard; peptide; 27 AA.
                                         98WO-US026792
                                                         97US-0069706P
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                                                                         (UTAH ) UNIV UTAH RES FOUND.
(UYVR-) UNIV VRIJE.
(REGC ) UNIV CALIFORNIA.
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(UYVR-) UNIV VRIJE.
(REGC ) UNIV CALIFORNIA.
                                                                                                            Kits KS,
                                                                                                                    Shetty R,
                                                                                                                                    WPI; 1999-418708/35.
                                                                                                                                                                                                                                                                                                                                                                                               Conopeptide J101
                                                                                                                                                                                                                                                                                                   AAY24131 Length: 27
                                                                                                                                                                                                                                                                                  Sequence 27 AA;
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Modified-site
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                                                         16-DEC-1997;
                                                                                                            Fainzilber M,
                                         16-DEC-1998;
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                        24-JUN-1999
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                                                                                                                     Walkins M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic.
                                                                                                                                                                                                                                                                                                                                                              AAY24110;
                                                                                                                                                               channels
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The present invention describes gamma-carboxylated conopeptides derived from cone snail venom. The gamma-conopeptides and their propeptides are useful as agonists of neuronal pacemaker calcium channels. The conopeptides are naturally available in minute amounts in the venom of cone snails and their derivatives are synthetic. The peptides modulate slow inward cartion channels in vertebrates involved in syndromes of clinical relevance, such as epileptic activity in hippocampus and pacemaker potentials in heart muscle AAY24110 Length: 27 February 20, 2007 16:53 Type: Gamma-carboxylated conopeptides used as, CKTYSKYCEA DSECCTEQCV RSYCTLF Claim 20; Page 30; 61pp; English. Kits KS, burg Cruz LJ, ||AA_SEQUENCE |.0 |ID AAY24113 standard; peptide; 32 Shetty R, WPI; 1999-418708/35. Sequence 27 AA; Fainzilber M, Walkins M, S 13-SEP-1999 AAY24113; channels Gamma-carboxylated conopeptides used as, e.g. neuronal pacemaker calcium The present invention describes gamma-carboxylated conopeptides derived from cone snail venom. The gamma-conopeptides and their propertides are useful as agonists of neuronal pacemaker calcium channels. The conopeptides are naturally available in minute amounts in the venom of cone snails and their derivatives are synthetic. The peptides modulate slow inward cation channels in vertebrates involved in syndromes of clinical relevance, such as epileptic activity in hippocampus and pacemaker potentials in heart muscle. The present sequence represents a gamma-conopeptide Walker C; Type: P Check: 8971 , Burlingame AL, Olivera BM, Wal Cruz LJ, Imperial J, Colledge C; WO9930732-A1

Check: 8841

a,

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Conopeptide, gamma-conopeptide, venom, cone snail; cation channel, epilepsy, pacemaker, heart muscle, neuronal pacemaker calcium channel. /note= "optionally gamma-carboxyglutamic acid" /note= "optionally hydroxy-Pro" Location/Qualifiers "optionally entry) /note= (first Conopeptide Gm6.7. Conus gloriamaris. Synthetic. Misc-difference Key Modified-site Modified-site Modified-site

ပ Olivera BM, W /note= "optionally hydroxy-Pro" Burlingame AL, Oliv. ruz LJ, Imperial J, 98WO-US026792 97US-0069706P Cruz (UTAH) UNIV UTAH RES FOUND. (UYVR-) UNIV VRIJE. (REGC) UNIV CALIFORNIA. Kits KS, M, Kits KS, Shetty R, WPI; 1999-418708/35 WO9930732-A1 16-DEC-1998; 16-DEC-1997; 24-JUN-1999 Fainzilber Walkins M,

Gamma-carboxylated conopeptides used as, e.g. neuronal pacemaker calcium

Claim 20; Page 30; 61pp; English

channels.

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Gamma-carboxylated conopeptides used as, e.g. neuronal pacemaker calcium
The present invention describes gamma-carboxylated conopeptides derived from cone snail venom. The gamma-conopeptides and their propeptides are useful as agonists of neuronal pacemaker calcium channels. The conopeptides are naturally available in minute amounts in the venom of cone snails and their derivatives are synthetic. The peptides modulate slow inward cation channels in vertebrates involved in syndromes of clinical relevance, such as epileptic activity in hippocampus and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention describes gamma-carboxylated conopeptides derived from cone snail venom. The gamma-conopeptides and their propeptides are useful as agonists of neuronal pacemaker calcium channels. The
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epilepsy; pacemaker; heart muscle; neuronal pacemaker calcium channel.
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                                                                                                                                                                                Type: P Check: 9467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note= "optionally gamma-carboxyglutamic acid"
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l J, Colledge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note= "optionally 6-bromo-Trp'
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cuz LJ, Imperial J,
                                                                                                                                                                              February 20, 2007 16:53
                                                                                                                                                                                                               ECRAWYAPCS PGAQCCSLLM CSKATSRCIL AL
                                                                                                                  pacemaker potentials in heart muscle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                             SEQUENCE 1.0
AAY24115 standard; peptide; 27 AA
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VRIJE.
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(UYVR-) UNIV VRIJE.
(REGC ) UNIV CALIFORNIA.
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                                                                                                                                                                                                                                                                                                                                                           Conopeptide Mr6.2.
                                                                                                                                                                                Length: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                       Conus marmoreus
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                                                                                                                                                Sequence 32 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           Synthetic
                                                                                                                                                                                                                                                                                             AAY24115;
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neuronal pacemaker calcium
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                                                                                                                                                                                                          Conopeptide; gamma-conopeptide; venom; cone snail; cation channel; epilepsy; pacemaker; heart muscle; neuronal pacemaker calcium channel.
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                          Check: 8902
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                                                                                                                                                                                                                                                                                                                                                                              'note= "optionally gamma-carboxyglutamic acid"
                                                                                                                                                                                                                                                                                                                                                  "optionally gamma-carboxyglutamic acid"
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Cruz LJ, Imperial J, Colledge C;
                          Type: P
                                                                                                                                                                                                                                                                                                                        note= "optionally 6-bromo-Trp"
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                        February 20, 2007 16:53
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                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                     DEECCSESCV RSYCTLF
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ID AAY24112 standard; peptide; 31 AA.
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                                                                              !!AA_SEQUENCE 1.0
ID _AAY24107 standard; peptide; 32
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(UTVR-) UNIV VRIJE.
(REGC ) UNIV CALIFORNIA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1999-418708/35
                                                                                                                                                                               Conopeptide PnVIIA.
                          Length: 27
                                                     CGGWSTYCEV
                                                                                                                                                                                                                                                     pennaceus,
                                                                                                                                                                                                                                                                                                          Misc-difference
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Sequence 27 AA;
                                                                                                                                                                                                                                                                                                                                       Modified-site
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                                                                                                                                                                                                                                                                  Synthetic
                                                                                                                          AAY24107;
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                           AAY24115
                                                                                                                                                                                                                                                                                               Key
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spilepsy; pacemaker; heart muscle; neuronal pacemaker calcium channel

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Gamma-carboxylated conopeptides used as, e.g. neuronal pacemaker calcium
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                                  Conopeptide; gamma-conopeptide; venom; cone snail; cation channel; epilepsy; pacemaker; heart muscle; neuronal pacemaker calcium channel.
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                                                                                                                          note= "optionally gamma-carboxyglutamic acid"
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                                                                                                                                                                              "optionally gamma-carboxyglutamic acid"
                                                                                                                                                                                                                                                                                                                                            Walker
e C;
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l J, Colledge
                                                                                                        note= "optionally 6-bromo-Trp"
                                                                                                                                           note= "optionally hydroxy-Pro
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                                                                                      Location/Qualifiers
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standard; peptide; 34
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entry)
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(REGC ) UNIV CALIFORNIA.
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Walkins M, Shetty R,
13-SEP-1999 (first
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                 Conopeptide Tx6.5
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                                                                                              Misc-difference
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                                                                                                                                                                                                         Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 31 AA;
                                                            Conus textile
                                                                                                                                                    Modified-site
                                                                                                               Modified-site
                                                                                                                                  Modified-site
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                                                                    Synthetic
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ID AAY24111
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e.g. neuronal pacemaker calcium
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                                                                                                                                                                                                                                                                                                                                                          acid"
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ruz LJ, Imperial J, Colledge
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                                                                                                                                                                   "optionally 6-bromo-Trp"
                                                                                                                                                                                                                  /note= "optionally 6-bromo-Trp"
                                                                                                                                                                                                                                                              note= "optionally hydroxy-Pro"
                                                                                                                 'note= "optionally 6-bromo-Trp"
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                                                                     Location/Qualifiers
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standard; peptide; 29
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(UYVR-) UNIV VRIJE.
(REGC ) UNIV CALIFORNIA.
                                                                                                                                                                   'note=
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Conus textile.
Synthetic.
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Synthetic

24-JUN-1999

Walkins M,

channels

AAY24127;

97US-0069706P

16-DEC-1997;

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Disclosure; Page 55; 61pp; English.
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                                                                                         Cruz LJ,
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(UYVR-) UNIV VRIJE.
                         (UTAH ) UNIV UTAH RES FOUND.
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(REGC ) UNIV CALIFORNIA.
                                   (UYVR-) UNIV VRIJE.
(REGC ) UNIV CALIFORNIA
                                                                             Kits KS,
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                                                                                         Shetty R,
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                                                                                                                    WPI; 1999-418708/35
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                                                                             Fainzilber M,
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13-SEP-1999
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Gamma-carboxylated conopeptides used as, e.g. neuronal pacemaker calcium
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                                                     'note= "optionally gamma-carboxyglutamic acid"
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                                                                                                      note= "optionally hydroxy-Pro"
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ID AAY24127 standard; peptide; 26
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(REGC ) UNIV CALIFORNIA.
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                                                                                                                   Misc-difference
                                                                  Misc-difference
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                                                                                           Modified-site
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Gamma-carboxylated conopeptides used as, e.g. neuronal pacemaker calcium
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    Walker C;
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Cruz LJ, Imperial J, Colledge C;
Burlingame AL, Olivera BM, Wal
cuz LJ, Imperial J, Colledge C;
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pacemaker calcium
cone snails and their derivatives are synthetic. The peptides modulate slow inward cation channels in vertebrates involved in syndromes of clinical relevance, such as epileptic activity in hippocampus and pacemaker potentials in heart muscle. The present sequence represents a gamma-conopeptide. (Updated on 27-AUG-2003 to correct OS field.)
                                                                                                                                                                                                                                            Conopeptide; gamma-conopeptide; venom; cone snail; cation channel; epilepsy; pacemaker; heart muscle; neuronal pacemaker calcium channel.
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uz LJ, Imperial J, Colledge
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                                                                                                                                                  peptide; 39
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                                                                                                                                                  standard;
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                                                                                                                                                                                                                     Tx6.9
                                                                                           AAY24130 Length: 32
                                                                                                                                                                                                                                                                                                                            Misc-difference
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                                                                    Sequence 32 AA;
                                                                                                                                                                                                                                                                                Conus textile,
                                                                                                                                                                                                                                                                                                                                                                                                                     Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                            Modified-site
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Walkins M, S}
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                                                                                                                                                                                                                     Conopeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24-JUN-1999
                                                                                                                                                                                                                                                                                            Synthetic.
                                                                                                                                      SEQUENCE
AAY24109
                                                                                                                                                                        AAY24109;
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The present invention describes gamma-carboxylated conopeptides derived from cone snail venom. The gamma-conopeptides and their propeptides are

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the conotoxin precursors. The mature peptide sequences were discovered by obtaining conotoxin cDNA sequences from mRNA from the brocade cone shell (Conus textile) or the line cone shell (Conus striatus). The cDNA sequences were used to determine the conotoxin precursor protein sequences, and the sequences of the mature conotoxin peptides were inferred from the precursor sequences. The mature conotoxin peptides can be obtained via chemical synthesis or by in vitro gene expression. Conotoxins inhibit the function of neurons and muscle cells. Certain conotoxins interfere with synaptic transmission, while others act on muscle or at the neuromuscular junction. The 14 novel conotoxins have unique receptor specificity and affinity, so can be used as screening tools to identify new drugs. Conotoxins that all (AV897540) may be used for pain relief. Sequences AAV87520, AAV87524, AAV87526, AAV87526, AAV87526, AAV87520, AAV87530, AAV8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            invention relates to 14 novel mature conotoxin peptides from marine 11s (Conus species); conotoxin precursor proteins; and cDNAs encoding
useful as agonists of neuronal pacemaker calcium channels. The conopeptides are naturally available in minute amounts in the venom of cone snails and their derivatives are synthetic. The peptides modulate slow inward cation channels in vertebrates involved in syndromes of clinical relevance, such as epileptic activity in hippocampus and pacemaker potentials in heart muscle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY87544 and AAY87546 represent mature conotoxins #1-#14, respectively
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cone shell; line cone shell; drug screening;
                                                                                                                                                                                                                                                                Check: 9205
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                                                                                                                                                                                                                                                                February 20, 2007 16:53 Type:
                                                                                                                                                                                                                                                                                                                      WWRWGGCMAW FGLCSRDSEC CSNSCDVTRC ELMPFPPDW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     neuronal inhibitor; muscle inhibitor
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ID AAY87530 standard; peptide; 24 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                          standard; peptide; 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99CN-00106070.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mature conotoxin peptide #7
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          conotoxin; brocade
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-351193/31.
                                                                                                                                                                                                                                                                Length: 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Huang P;
                                                                                                                                                                                                        Sequence 39 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-APR-1999;
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                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE AAY87532
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conus
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28-DEC-2000; 2000WO-US035431.

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The invention relates to 14 novel mature conotoxin peptides from marine shails (Conus species); conotoxin precursor proteins; and cDNAs encoding the conotoxin precursors. The mature peptide sequences were discovered by obtaining conotoxin cDNA sequences from mRNA from the brocade cone shell (Conus textile) or the line cone shell (Conus striatus). The cDNA sequences, and the sequences of the mature conotoxin peptides were inferred from the precursor sequences. The mature conotoxin peptides can be obtained via chemical synthesis or by in vitro gene expression.

Conotoxins inhibit the function of neurons and muscle cells. Certain conotoxins inhibit the function of neurons and muscle cells. Certain conotoxins interfere with synaptic transmission, while others act on muscle or at the neuromuscular junction. The 14 novel conotoxins have unique receptor specificity and affinity, so can be used as screening tools to identify new drugs. Conotoxin #11 (AAY87540) may be used for pain relief. Sequences AAY87522, AAY87524, AAY87526, AAX87526, AAX87528, AAX87530, AAX87532, AAY87532, AAY87534, AAY87534, AAY87534, AAY87534, AAY87534, AAY87534, AAY87530, AAX87530, AAX87530, AAX8754, respectively
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cone snail; O-superfamily conotoxin; sodium channel; dasease; demyelinating disease; multiple sclerosis; Muntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma;
                                                                                      Mature conotoxin; brocade cone shell; line cone shell; drug screening; neuronal inhibitor; muscle inhibitor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conotoxin peptide from brocane cone shells useful as analgesic.
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                                                                                                                                                                                                                                                                                                                                           (BIOL-) BIOLOGICAL ENG INST ACAD MILITARY MEDICI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cone snail O-superfamily conotoxin, Af6.10.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1A; Page 4; 20pp; Chinese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CYDGGTSCDS GIQCCSGWCI FVCF
                                                                                                                                                                                                                                                                  99CN-00106070.
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                                                       Mature conotoxin peptide #6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-OCT-2001 (first entry)
               18-JUL-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ischaemia; stroke; pain.
                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2000-351193/31.
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                                                                                                                                                                                                                                                                                                        30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                   Huang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE 1.0
                                                                                                                                                                                       CN1237584-A.
                                                                                                                                                     Conus sp.
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12-JUL-2001.

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The sequence is a cone snail O-superfamily conotoxin peptide. The peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltege gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis, optic neuromyelitis, dispeninated encephalomyelitis, affectoris, optic neuromyelitis, dispeninated encephalomyelitis (SSPB), metachromatic leukodystrophy, pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin poisoning, Huntington's, compression, entrapment neuropathies i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive cypturation, neurotrasmaitter disorders (i.e. Baton-Lambert syndrome) and reversal of curare and other neuromuscular blocking drugs. The neurological disorder is a seizure, preferably one associated with stroke, cerebrovascular accident, brain or spinal cord trauma, with hypoxia, anoxia or ischaemia. The neurotoxic injury is associated with stroke, cerebrovascular accident, brain or spinal cord trauma, myocardial infarct, physical trauma, drownings, suffocation, peristed conte pain, neuropathic pain, nocloeptive pain. The disorder is pain in emmanal and cardiace events. The disorder is pain in a more associated with readical defolarisation or a cardiovascular disorder. A conctoxin to be conceptive fain in a mammal in a mammal in a mannel, the disorders include cardiac, ocular and cerebral is ocular and cerebral isorders and and central and cardiac, coular and cerebral isorders and and cardiac, coular and cerebral isorders and and cardiace ocular and cerebral and cerebral isorders and cerebral associated of sethered to a pain causing event, and to treat disorders associated associated or as the set of the cerebral and cerebral is refered to a pa
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                                                                                                                                                                                                                                                                                                                                          uperfamily polypeptides useful for treating voltage gated ion disorders, including demyelinating diseases i.e. multiple
                                                                                                                                                                                                                                Mcintosh JM;
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                                                                                                                                                                                                                             Hillyard DR,
                                                                                                                                                                                                                                  Cartier GE, Watkins M,
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                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 2; Page 60; 277pp; English.
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ID _AAU05972 standard; peptide; 27
                                                              26-JUN-2000; 2000US-0214263P.
20-JUL-2000; 2000US-0219440P.
27-OCT-2000; 2000US-0243412P.
                                             99US-0173754P
                                                                                                                                                            (UTAH ) UNIV UTAH RES FOUND.
(COGN-) COGNETIX INC.
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                                                                                                                                                                                                                                                        Jones RM;
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                                                                                                                                                                                                                                                                                                                                                 New O-superfamily
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                                             30-DEC-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                    sclerosis.
                                                                                                                                                                                                                                                          Layer RT,
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channels in an individual and the treatment or prevention of disorders associated with voltage gated in channel disorders, including beddium channels in an individual and the treatment or prevention of disorders associated with voltage gated in channel disorders, including lasses i.e. multiple sclerosis, optic neuromyelitis, disseminated encephalomyelitis, adrenoleukodystrophy, acute transverse well-tis, progressive multifocal leukodystrophy, acute transverse myelitis, progressive multifocal leukodystrophy, sub acute paisty, and carpal cunnel syndrome, cardiovascular disorders, i.e. selizates. Huntington's, compression, entrapment neuropathies i.e. ulnar nerve paisty, and carpal cunnel syndrome, cardiovascular disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, condiction, cancer, cognitive dysfunction, neurotransmitter disorders (i.e. Baton-Lambert syndrome) and cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, completed blocking drugs. The reversal of curare and other neuromuscular blocking drugs. Their neurological disorder is a neurotoxic injury is associated with thypoxia, anoxia or ischaemia. The neurotoxic injury is associated with stroke, cerebrovascular accident, brain or spinal cord trauma, myensistent pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder. A conotoxin cacute pain, persistent pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder. A conotoxin cabbiected to a pain causing event, and to treat disorder; and cancing and created and cerebral isorder and cerebral isorder and cerebral isorder and cerebral depolarisation of excitable membranes by activating a RATP channel, the disorders include cardiac, ocular and cerebral isorders and cerebral a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O-superfamily polypeptides useful for treating voltage gated ion nnel disorders, including demyelinating diseases i.e. multiple
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                                                                                                                                                                                                                                                                                  30-DEC-1999; 99US-0173754P.
26-JUN-2000; 2000US-0214263P.
20-JUN-2000; 2000US-021440P.
27-OCT-2000; 2000US-0243412P.
                                                                                                                                                                                      28-DEC-2000; 2000WO-US035431.
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WO200149312-A2.
                                                                                                                                                                                                                                                                             30-DEC-1999;
                                                                                           12-JUL-2001
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1 XCIXSGDLCF RSDHIQCCSG KCAFVCL !!AA_SEQUENCE 1.0 ID _AAU06037 standard; peptide; 31 AA.

AAU06037 Length: 31 February 20, 2007 16:53 Type: P Check: 6262

Sequence 31 AA;

NRLSRCIPSG DLCFPSDHIQ CCSAKCAFVC L

| IAA_SEQUENCE 1.0 | ID AAU06044 standard; peptide; 26 AA.

Cone snail O-superfamily conotoxin, Cr6.6B.

24-OCT-2001 (first entry)

AAU06044;

BXXXXXB

Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma; Cone snail O-superfamily conotoxin propeptide, Cr6.5A. 24-OCT-2001 (first entry) AAU06037; **EEEEEEEEEEEEEEEEEEEEEEEE**

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The sequence is a cone snail O-superfamily conotoxin propeptide. The peptides are useful for regulating the flow of sodium through sodium constitution in individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including demonstrated with voltage gated ion channel disorders, including demonstrated with voltage gated ion channel disorders, including demonstrated encephalomyelitis, adrenoleukodystrophy, acute transverse constitutes, progressive multifocal leukoencephalopathy, such ctransverse myelitis, progressive multifocal leukoencephalopathy, such acute consecuence active palay, and carpal tunnel syndrome, cardiovascular disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, cardiac arrhythmias and congestive heart failure, reactive gliosis, cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia immunosuppression, cocaine addiction, cancer, cognitive consecration, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and reversal of curare and other neuromuscular blocking drugs. The neurological disorder is a seizure, preferably one associated with hypoxia, anoxia or ischaemia. The neurotoxic injury associated with stroke, cerebrovascular accident, brain or spinal cord trauma, myocardial infanct, physical trauma, drownings, suffocation, persistent pain, neuropathic pain, nociceptive pain. The acute pain, persistent pain, neuropathic pain, nociceptive pain. The disorder is nifiammation or a cardiovascular disorder. A conotoxic in captive content of superide of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders associated with contactive depolation of excitable membranes by activating a drawning and contactive contactive in the contactive 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        channel, the disorders include cardiac, ocular and cerebral ischaemia and
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                                                                                                                                                                                                                                                                                                                                                                                                                                              Watkins M, Hillyard DR, Mcintosh JM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 15; Page 89; 277pp; English.
                                                                                                                                                                                                                                                                   26-JUN-2000; 2000US-0214263P.
20-JUL-2000; 2000US-0219440P.
27-OCT-2000; 2000US-0243412P.
                                                                                                                                                                                              28-DEC-2000; 2000WO-US035431.
                                                                                                                                                                                                                                                                                                                                                                 (UTAH ) UNIV UTAH RES FOUND. (COGN-) COGNETIX INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Cartier GE,
ischaemia; stroke; pain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Jones RM;
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                                                  Conus circumcisus.
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                                                                                                WO200149312-A2.
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The sequence is a cone snail O-superfamily conotoxin peptide. The peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including sodium channel disorders, including the subsequence of dissorders including diseases i.e. multiple sclerosis, optic neuromyelitis, disseance disease, spinal cord injury, both acute transverse myelitis, progressive multifocal leukoencephalopathy, sub acute transverse contensement metages metagenesses, spinal cord injury, bothulnum toxin poisoning, Huntington's, compression, entragment neuropathies i.e. ulnar nerve palsy, and carpal tunnel syndrome, cardiovascular disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis. hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and creversal of curare and other neuromuscular blocking drugs. The neurological disorder is a seizure, preferably one associated with epilepsy. The neurological disorder is a neurotoxic injury is associated with stroke, cerebrovascular accident, brain or spinal cord trauma, complete the suppolycaemic events. The disorder is pain ine migraine, aspectate pain, persistent pain, neuropathic pain, not spinal cardiace associated disorder is inflammation or a cardiovascular disorder: A conotoxin city pain and a cardiovascular disorder: A conotoxin of subjected to a pain causing event, and to treat disorders associated with cardical depolarisation of excitable membranes by activating a Kahpen and memmel, the disorders include cardiac, ocular and cerebral isochem and
                 Cone snail; O-superfamily conotoxin; sodium channel; dadease; demyelhating disease; multiple sclerosis; Muntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Watkins M, Hillyard DR,
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2000US-0214263P.
2000US-0219440P.
2000US-0243412P.
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                                                                                                      ischaemia; stroke; pain
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                                                                                                                                               Conus circumcisus.
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Mcintosh JM;

February 20, 2007 16:53 Type: P Check: 5060 AAU06044 Length: 26

CIXSGDLCFX SDHIQCCNAK CAFACL

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| IAA_SEQUENCE 1.0
| ID AAU06047 standard; peptide; 31 AA.
                                  AAU06047
              SXB
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Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma; Mcintosh JM; Watkins M, Hillyard DR, Cone snail O-superfamily conotoxin propeptide, 30-DEC-1999; 99US-0173754P. 26-JUN-2000; 2000US-0214263P. 20-JUL-2000; 2000US-0243412P. 28-DEC-2000; 2000WO-US035431. (UTAH) UNIV UTAH RES FOUND 24-OCT-2001 (first entry) Cartier GE, ischaemia; stroke; pain. (COGN-) COGNETIX INC Layer RT, Jones RM; WPI; 2001-418352/44. Conus circumcisus. N-PSDB; AAS11011 WO200149312-A2. Olivera BM, 12-JUL-2001

New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis.

Claim 15; Page 91; 277pp; English.

The sequence is a cone snail O-superfamily conotoxin propeptide. The peptides are useful for regulating the flow of sodium through sodium contained in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis, optic neuromyelitis, descendent or pervention of disorders conspiration of disorders including demyelitis, decencebalopathy, sub acute transverse myelitis, progressive multifocal leukcencephalopathy, sub acute transverse consists panecephalomyelitis (SSPE), metachromatic leukodystrophy, conspiration, succephalomyelitis (SSPE), metachromatic leukodystrophy, consoning, Huntington's, compression, entrapment neuropathies i.e. ulnar nerve palsy, and carpal tunnel syndrome, cardiovascular disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive glossis, cardiac arrhythmias and congestive heart failure, reactive glossis, cardiac arrhythmias and congestive heart failure, reactive glossis, cardiac dysfunction, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and cardiac disorder is a seizure, preferably one associated with epilepsy. The neurological disorder is a neurotoxic injury is associated with stroke, cerebrovascular accident, brain or spinal cord trauma, myocardial infarct, physical trauma, drownings, suffocation, perinatal aspharation or a cardiovascular disorder is pain in a sammal in a separation causing event. A conotoxin caute pain, persistent pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular and cortax disorders associated with cardical depolarisation of excitable membranes by activating a KATP cardical depolarisation of excitable membranes by activating and cellant and activating and cellant and cardiac, occurating and cellant and cardiac, occurating and cellant and cardiac, occurating and cellant and activating and cellant and cardiac, occurating and cellant and cardiac, occurating and cellant and cardiac, occurating and cel

Sequence 31 AA;

Type: P Check: 6984 AAU06047 Length: 31 February 20, 2007 16:53

NRLSWCIPTG DLCFPSDHIQ CCSGKCTFVC M

demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma; New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple Mcintosh JM; O-superfamily conotoxin; sodium channel; Watkins M, Hillyard DR, Cone snail O-superfamily conotoxin, Cr6.7. !!AA_SEQUENCE 1.0 ID AAU06048 standard; peptide; 27 AA. Claim 2; Page 92; 277pp; English. 26-JUN-2000; 2000US-0214263P. 20-JUL-2000; 2000US-0219440P. 27-OCT-2000; 2000US-0243412P. 28-DEC-2000; 2000WO-US035431. (UTAH) UNIV UTAH RES FOUND. 24-OCT-2001 (first entry) Cartier GE, ischaemia; stroke; pain. (COGN-) COGNETIX INC WPI; 2001-418352/44. Jones RM; Conus circumcisus. WO200149312-A2. 30-DEC-1999; snail; Olivera BM, 12-JUL-2001 Layer RT, sclerosis. AAU06048;

channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including channels in an individual and the treatment or prevention of disorders channels in an individual and the treatment or prevention of disorders demyelinating diseases i.e. multiple sclerosis, optic neuromyelitis, disseminated encephalomyelitis, adrenoleukodystrophy, acute transverse compelitis, progressive multifocal leukodostrophy, sub acute transverse compelitis, progressive multifocal leukodystrophy, belizaeus-Merzbacher disease, spinal cord injury, botulinum toxin colerosing panecephalomyelitis (SSPE), metachromatic leukodystrophy, Pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin cordiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, entrapment neuropathers, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and reversal of curare and other neuromacular blocking drugs. The neurological disorder is a seizure, preferably one associated with epidosy, anoxia or ischaemia. The neurotoxic injury is associated with stroke, cerebrovascular accident, brain or spinal cord trauma, mycardial infarmati, physical trauma, drownings, suffocation, perinated applyxia or hypoglycaemic events. The disorder is infarmatal accident is infammatical or associated disorder is infammation or a cardiovascular in a cardiovascular peptide of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders associated with radical depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac, ocular and cerebral ischaemia and sequence is a cone snail O-superfamily conotoxin peptide. The

Sequence 27 AA;

AAU06048 Length: 27 February 20, 2007 16:53 Type: P Check: 8247

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XCIXTGDLCF XSDHIQCCSG KCTFVCM
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demyelinating disease, multiple sclerosis, Huntingdon's disease, neuropathy, carpal tunnel syndrome, cardiovascular disorder, congestive heart failure, cancer; immunosuppression, epilepsy; asthma,
                                     Cone snail O-superfamily conotoxin propeptide, 06.4.
                                               snail; O-superfamily conotoxin; sodium channel;
!!AA_SEQUENCE 1.0
ID AAU05953 standard; peptide; 32 AA.
                                                                     ischaemia; stroke; pain.
                          24-OCT-2001
                AAU05953;
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Conus obscurus.

WO200149312-A2.

12-JUL-2001.

28-DEC-2000; 2000WO-US035431

30-DEC-1999; 99US-0173754P. 26-JUN-2000; 2000US-0214263P. 20-JUL-2000; 2000US-0219440P.

27-OCT-2000; 2000US-0243412P

(UTAH) UNIV UTAH RES FOUND. COGNETIX INC (COGN-) Watkins M, Hillyard DR, Mcintosh JM; Cartier GE, Jones RM; Olivera BM, Layer RT,

WPI; 2001-418352/44.

N-PSDB; AAS10964.

New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis.

Claim 15; Page 66; 277pp; English.

periotoring jaracterization (3572), merationario termonaphricoling paracterization (3572), merationario periotoring paracterization confiniury, botulinum toxin poisoning, Huntington's, compression, entrapment neuropathies i.e. ulnar nerve palsy, and carpal tunnel syndrome, cardiovascular disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and creveral of curare and other neuromuscular blocking drugs. The neurological disorder is a seizure, preferably one associated with enough and a seizure, preferably one associated with a neurological disorder is a neurotoxic injury associated with thypoxia, anoxia or ischaemia. The neurotoxic injury is associated with stroke, cerebrovascular accident, brain or spinal cord trauma, myocardial infarct, physical trauma, drownings, suffocation, perinatal asphyxia or hypoglycaemic events. The disorder is pain i.e. migraine, cutte pain, perefistent pain, neuropathic pain, nocioeptive pain. The disorder is inflammation or a cardiovascular disorder. A conotoxin peptide of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders associated with The sequence is a cone snail O-superfamily conotoxin propeptide. The peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis, optic neuromyelitis, disominated encephalomyelitis, adrenoleukodystrophy, acute transverse myelitis, progressive multifical leukoencephalopathy, sub acute sclerosing panecephalomyelitis (SSPE), metachromatic leukodystrophy,

SXSSS

The disorder is pain i.e. migraine

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The sequence is a cone snail O-superfamily conotoxin propeptide. The peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including associated with voltage gated ion channel disorders, including convey limit of the convey limit of the convey convey limit of the conv
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of excitable membranes by activating a KATP include cardiac, ocular and cerebral ischaemia
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channel disorders, including demyelinating diseases i.e. multiple
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                                                                                                                                                                                                                                                                                Type: P
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|ID AAU06033 standard; peptide; 31 AA.
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20-JUL-2000; 2000US-0219440P.
27-OCT-2000; 2000US-0243412P.
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    depolarisation
the disorders
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    radical
                                                                                          asthma
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The sequence is a cone snail O-superfamily conotoxin peptide. The peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis, optic neuromyelitis, diseminated encephalomyelitis, adrenoleukodystrophy, acute transverse myelitis, progressive multifocal leukoencephalopathy, sub acute transverse clerosing panecephalomyelitis (SSPS), metachromatic leukodystrophy, pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin colerosing, Huntington's, compression, entrapment neuropathies i.e. ulnar nerve palsy, and carpal tunnel syndrome, cardiovascular disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, neurotransmitter disorders (i.e. Baton-Lambert syndrome) and reversal of curare and other neuronmacular blocking drugs. The neurological disorder is a seizure, preferably one associated with
                  acute pain, persistent pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder. A conotoxin peptide of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders associated with radioal depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac, ocular and cerebral ischaemia and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma;
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                                                                                                                                                                                                                  Type:
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or hypoglycaemic events.
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AAU06038 standard; peptide; 26
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26-JUN-2000; 2000US-0214263P.
20-JUL-2000; 2000US-0219440P.
27-OCT-2000; 2000US-0243412P.
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Jones RM;
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                                                                                                                                                                                                                      Length: 31
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epilepsy. The neurological disorder is a neurotoxic injury associated with hypoxia, anoxia or ischaemia. The neurotoxic injury is associated with stroke, cerebrovascular accident, brain or spinal cord trauma, myocardial infarct, physical trauma, drownings, suffocation, perinatal asphyxia or hypoglycaemic events. The disorder is pain i.e. migraine, acute pain, persistent pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder. A conctoxin peptide of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders associated with radical depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac, ocular and cerebral ischaemia and
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Sequence 26 AA;

February 20, 2007 16:53 Type: P Check: 5654 AAU06038 Length: 26

1 CIXSGDLCFX SDHIQCCSAK CAFVCL

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Cone snail O-superfamily conotoxin, Cr6.6C.
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!!AA_SEQUENCE 1.0
ID AAU06046 standard; peptide; 27
           (first entry)
           24-OCT-2001
       AAU06046;
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Cone snail; O-superfamily conotoxin; sodium channel; disease; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma; ischaemia; stroke; pain.

Conus circumcisus.

WO200149312-A2.

12-JUL-2001

28-DEC-2000; 2000WO-US035431

99US-0173754P. 2000US-0214263P. 2000US-0219440P. 20-JUL-2000; 30-DEC-1999; 26-JUN-2000;

27-OCT-2000; 2000US-0243412P

(UTAH) UNIV UTAH RES FOUND. (COGN-) COGNETIX INC

Watkins M, Cartier GE, Jones RM; Olivera BM, Layer RT,

Mcintosh JM;

Hillyard DR,

WPI; 2001-418352/44.

New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis.

Claim 2; Page 91; 277pp; English.

Pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin yosoning, Huntington's, compression, entrapment neuropathies i.e. ulnar nerve palsy, and carpal tunnel syndrome, cardiovascular disorders, i.e. cardiora arrhythmias and congestive heart failure, reactive gliosis, The sequence is a cone snail O-superfamily conotoxin peptide. The peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis, optic neuromyelitis, disseminated encephalomyelitis, adrenoleukodystrophy, acute transverse myelitis, progressive multifacal leukoencephalopathy, sub acute sclerosing panecephalomyelitis (SSPE), metachromatic leukodystrophy,

dysfunction, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and reversal of curare and other neuromuscular blocking drugs. The neurological disorder is a neurotroxic preferably one associated with neurological disorder is a neurotroxic injury associated with hypoxia, anoxia or ischaemia. The neurotoxic injury is associated with hypoxia, anoxia or ischaemia. The neurotoxic injury is associated with hypoxia, anoxia or ischaemia. The neurotoxic injury is associated with hypoxia, anoxia or ischaemia. The neurotoxic injury is associated myocardial infarct, physical trauma, frownings, suffocation, perinatal asphyxia or hypoglycaemic events. The disorder is pain, neurotoxin in the disorder is inflammation or acrdiovascular disorder. A conotoxin peptide of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorder. A conotoxin chadical depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac, ocular and cerebral ischaemia and cocaine addiction,

Sequence 27 AA;

AAU06046 Length: 27 February 20, 2007 16:53 Type: P Check: 7563

XCIXSGDLCF XSDHIQCCNA KCAFVCL

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AAU06052 standard; peptide; 27 AA.
                                                                                  (first entry)
! AA_SEQUENCE 1.0
                                                                                  24-OCT-2001
                                                    AAU06052;
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Cone snail O-superfamily conotoxin, Sm6.5.

Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failune; cancer; immunosuppression; epilepsy; asthma; ischaemia; stroke; pain.

Conus stercusmuscarum.

WO200149312-A2.

12-JUL-2001

28-DEC-2000; 2000WO-US035431.

30-DEC-1999; 99US-0173754P. 26-JUN-2000; 2000US-0214263P. 20-JUL-2000; 2000US-0219440P.

27-OCT-2000; 2000US-0243412P (UTAH) UNIV UTAH RES FOUND.

COGNETIX INC. (COGN-)

Hillyard DR, Watkins M, Cartier GE, Jones RM; Olivera BM, Layer RT,

Mcintosh JM;

WPI; 2001-418352/44.

New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple

Claim 2; Page 93; 277pp; English.

sclerosis.

peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis, optic neuromyelitis, disseminated encephalomyelitis, adrenoleukodystrophy, acute transverse myelitis, progressive multifocal leukoencephalopathy, sub acute sclerosing panecephalomyelitis (SSPE), metachromatic leukodystrophy, cone snail O-superfamily conotoxin peptide. The sequence is a

Wed Feb 21 10:04:12 2007

poisoning, Huntington's, compression, entrapment neuropathies i.e. ulnar poisoning, Huntington's, compression, entrapment neuropathies i.e. ulnar nerve palsy, and carpal tunnel syndrome, cardiard disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, neurotransmitter disorders (i.e. Baton-Lambert syndrome) and reversal of curare and other neuromuscular blocking drugs. The neurological disorder is a selaure, preferably one associated with sproxia, anoxia or ischaemia. The neurotoxic injury is associated with stroke, cerebrovascular accident, brain or spinal cord trauma, myocardial infarct, physical trauma, drownings, suffocation, perinatal capping or ischaemic events. The disorder is pain i.e. migraine, cutte pain, persistent pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder. A conotoxin capping of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders associated with radical depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac, ocular and cerebral ischaemia and

Sequence 27 AA;

February 20, 2007 16:53 Type: P Check: 7832 AAU06052 Length: 27

XCIXSGXLCP RSDHIQCCSA KCAFVCL ч

SEQUENCE 1.0 AAU06019 standard; peptide; 29 AA. (first entry) (revised) 06-AUG-2003 24-OCT-2001 AAU06019;

Cone snail O-superfamily conotoxin propeptide, Ac6.1.

ischaemia; stroke; pain.

Conus sp.

WO200149312-A2

12-JUL-2001

28-DEC-2000; 2000WO-US035431. 99US-0173754P. 30-DEC-1999;

2000US-0214263P. 2000US-0219440P. 27-OCT-2000; 2000US-0243412P. 26-JUN-2000; 20-JUL-2000;

UTAH) UNIV UTAH RES FOUND. COGNETIX INC. COGN-) Hillyard DR, Watkins M, Cartier GE, Jones RM; BW. Layer RT, Olivera

Mcintosh JM;

WPI; 2001-418352/44. N-PSDB; AAS10997.

New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple Claim 15; Page 84; 277pp; English. sclerosis.

The sequence is a cone snail O-superfamily conotoxin propeptide. The peptides are useful for regulating the flow of sodium through sodium

channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including demestalinating diseases i.e. multiple sclerosis, optic neuromyelitis, dispeninating diseases i.e. multiple sclerosis, optic neuromyelitis, dispeninating diseases i.e. multiple sclerosis, optic neuromyelitis, caute transverse compession panecephalomyelitis (SSPB), metachromatic leukodystrophy, sclerosing panecephalomyelitis (SSPB), metachromatic leukodystrophy, polizaeus-Merzbacher disease, spinal cord injury, botulinum toxin poisoning, Huntington's, compression, entrapment neuropathies i.e. ulnar cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive cystunction, neuroreransmitter disorders (i.e. Baton-Lambert syndrome) and reversal of curare and other neuromuscular blocking drugs. The neurological disorder is a neurotoxic injury associated with stroke, cerebrovascular accident, brain or spinal cord trauma, with hypoxia, anoxia or ischaemia. The neurotoxic injury associated with stroke, cerebrovascular accident, brain or spinal cord trauma, acute pain, persistent pain, neuropathic pain, nociceptive pain. The disorder is pain i.e. migraine, contine pain, persistent pain, neuropathic pain, nociceptive pain. The contine con peptide of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders associated with radical depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac, ocular and carebral ischaemia and asthma. (Updated on 06-AUG-2003 to correct OS field.)

Sequence 29 AA;

Type: P Check: 2540 AAU06019 Length: 29 February 20, 2007 16:53

1 LRWCIPRGDL CFPSDRIQCC SGKCTFVCM

!!AA SEQUENCE 1.0 ID —AAU06036 standard, peptide; 27 AA.

AAU06036;

24-OCT-2001 (first entry)

Cone snail O-superfamily conotoxin, Cr6.5.

Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma;

ischaemia; stroke; pain.

Conus circumcisus.

WO200149312-A2.

12-JUL-2001.

28-DEC-2000; 2000WO-US035431.

26-JUN-2000; 2000US-0214263P. 20-JUL-2000; 2000US-0219440P. 27-OCT-2000; 2000US-0243412P. 99US-0173754P 30-DEC-1999;

(UTAH) UNIV UTAH RES FOUND COGN-) COGNETIX INC

Mcintosh JM; Watkins M, Hillyard DR, Olivera BM, Cartier GE, Layer RT, Jones RM;

WPI; 2001-418352/44.

New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis.

The sequence is a cone snail O-superfamily conotoxin peptide. The peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including diseases i.e. multiple sclerosis, optic neuromyelitis, disseminated encephalomyelitis, adrenoleukodystrophy, acute transverse (disseminated encephalomyelitis, adrenoleukodystrophy, acute transverse politis, progressive multiple sclerosing panecephalomyelitis (SSPB), metachromatic leukodystrophy, pelizaeus-Merzbacher disease, apinal cord injury, botulinum toxin polsoning, Huntington's, compression, entrapment neuropathies i.e. ulnar cardiac arrhythmias and congestive heart failure, reactive gliosis, cardiac arrhythmias and congestive heart failure, reactive gliosis, cardiac arrhythmias and congestive heart failure, reactive gliosis, chyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and reversal of curare and other neuromuscular blocking drugs. The cerversal of curare and other neuromuscular blocking drugs. The contrological disorder is a selaure, preferably one associated with stroke, cerebrovascular accident, brain or spinal cord trauma, mycardial infarct, physical trauma, drownings, suffecation, perinatal asphyxia or hypoglycaemic events. The disorder is pain i.e. migraine, caute pain, persistent pain, neuropascular disorder; a pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder is pain disorder in inflammation or a cardiovascular disorder is pain. peptide of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders associated with radical depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac, ocular and cerebral ischaemia and Claim 2; Page 89; 277pp; English. $\overset{\mathbf{M}}{\times}\overset{\mathbf{$

Sequence 27 AA;

AAU06036 Length: 27 February 20, 2007 16:53 Type: P Check: 7658

XCIXSGDLCF XSDHIQCCSA KCAFVCL

!!AA_SEQUENCE 1.0 ID AAU06039 standard; peptide; 31 AA. 24-OCT-2001 (first entry) AAU06039;

Cone snail O-superfamily conotoxin propeptide, Cr6.6A.

Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma; ischaemia; stroke; pain.

Conus circumcisus.

WO200149312-A2.

12-JUL-2001

28-DEC-2000; 2000WO-US035431. 26-JUN-2000; 2000US-0214263P. 20-JUL-2000; 2000US-0219440P. 27-OCT-2000; 2000US-0243412P. 99US-0173754P. 30-DEC-1999;

(UTAH) UNIV UTAH RES FOUND. (COGN-) COGNETIX INC

Mcintosh JM; Hillyard DR, Watkins M, Cartier GE, Jones RM; Olivera BM, Layer RT,

WPI; 2001-418352/44. N-PSDB; AAS11007

The sequence is a cone shall of concoxin propeptide. The sequence is a cone shall of concoxin propeptide. The sequence is a cone shall of concoxin propeptide. The channels in an individual and the treatment or prevention of disorders channels in an individual and the treatment or prevention of disorders channels in an individual and the treatment or prevention of disorders demyelinating diseases i.e. multiple sclerosis optic neuromyelitis, disseminated encephalomyelitis, sclerosis optic neuromyelitis, dispensive multifocal leukocancephalopathy, sub acute transverse compensation generophalomyelitis, screen individual optic incurrence sclerosing panecephalomyelitis (SSPE), metachromatic leukodystrophy, elizaeus-Merzbacher disease, spinal cord injury, botulinum toxin nerve palsy, and carpal tunnel syndromel cord injury, botulinum toxin nerve palsy, and carpal tunnel syndrome, cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive cardiac arrhythmias and congestive heart sclaure, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive reversal of curare and other neuromuscular blocking drugs. The neurological disorder is a neurotoxic injury is associated with hypoxia, anoxia or ischaemia. The neurotoxic injury is associated with stroke, cerebrovascular accident, brain or spinal cord trauma, myccardial infarct, physical trauma, drownings, suffocation, perinatal contents and incure pain, persistent pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder. A conotoxin caute pain, persistent pain, neuropathic pain, in a mammal in pain or a bout to about candical depolarisation of excitable membranes by activating a RATP canhar. New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sequence is a cone snail O-superfamily conotoxin propeptide. Claim 15; Page 90; 277pp; English. sclerosis. asthma

Sequence 31 AA;

Type: P Check: 5997 AAU06039 Length: 31 February 20, 2007 16:53

NRLSRCIPSG DLCFPSDHIQ CCNAECAFVC L

failure; cancer; immunosuppression; epilepsy; asthma; demyelinating disease; multiple sclerosis, Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; imm.neurosis. Cone snail; O-superfamily conotoxin; sodium channel; Cone snail O-superfamily conotoxin, Cr6.6A. AAU06040 standard; peptide; 26 AA 24-OCT-2001 (first entry) ischaemia; stroke; pain. AAU06040; ! ! AA_SEQUENCE

Conus circumcisus.

WO200149312-A2. 12-JUL-2001

2000US-0214263P. 2000US-0219440P. 2000US-0243412P. 28-DEC-2000; 2000WO-US035431 99US-0173754P 26-JUN-2000; 20-JUL-2000; 27-OCT-2000; 30-DEC-1999;

(UTAH) UNIV UTAH RES FOUND. (COGN-) COGNETIX INC.

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The sequence is a cone snail O-superfamily conotoxin peptide. The peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion Channel disorders, including demoyelinating diseases i.e. multiple sclerosis, optic neuromyelitis, densembleukodystrophy, acute transverse consensinated encephalomyelitis, adrenoleukodystrophy, acute transverse myelitis, progressive multifocal leukoencephalopathy, sub acute transverse myelitis, progressive multifocal leukoencephalopathy, sub acute pelasoning, Huntington's, compression, entrapment neuropathies i.e. core palsy, and carpal tunnel syndrome, cardiovascular disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive glossis. Appenditure, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and cardiac arrhythmias and congestive heart failure, reactive glossis, chyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive dystunction, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and creversal of curare and other neuromuscular blocking drugs. The curclogical disorder is a seizure, preferably one associated with stroke, cerebrovascular accident, brain or spinal cod traume.

Creversal of curare and other neuromuscular injury is associated with stroke, cerebrovascular accident, brain or spinal cod traume, mycoardial infarct, physical trauma, drownings, suffocation, perinatal asphyia or hypoglycaemic events. The disorder is pain i.e. migraine, caute pain, persistent pain, neuropathic pain, nociceptive pain, persistent pain, neuropathic pain, nociceptive pain i.e. asphyiate pain in a mammal in pain or a bout to be subjected to a pain causing event, and to treat disorders associated with achieved the application of excitable membranes by activating and and each achieved to a pain causing event, and to treat disorders associated with achieved to a pain causing event, and course pain in a mammal in general and persistent pain, persis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma;
                                                                                                                      New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple
Hillyard DR, Mcintosh JM;
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  Watkins M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ||AA SEQUENCE 1.0
| ID AAU05922 standard; peptide; 24 AA.
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                                                                                                                                                                                                                   Claim 2; Page 90; 277pp; English.
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2000US-0214263P.
2000US-0219440P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ischaemia; stroke; pain.
BM, Carc
                                                                         WPI; 2001-418352/44.
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26-JUN-2000;
20-JUL-2000;
27-OCT-2000;
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                        Layer RT,
                                                                                                                                                                         sclerosis.
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(UTAH) UNIV UTAH RES FOUND. (COGN-) COGNETIX INC. 24-OCT-2001 (first entry) Cartier GE, Layer RT, Jones RM; WPI; 2001-418352/44. AAU05922 Length: 24 Sequence 24 AA; Olivera BM, AAU05980; SEQUENCE

The sequence is a cone snail O-superfamily conotoxin peptide. The peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including demoyalities, adrenoleukodystrophy, acute transverse disseminated encephalomyalitis, adrenoleukodystrophy, acute transverse constraints and compalities, adrenoleukodystrophy, acute transverse myelitis, progressive multifocal leukoencephalopathy, sub acute palicy multington's, compression, entrapment neuropathies i.e. ulnar perior palsy, and carpal tunnel syndrome, cardiovascular disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, coralie addiction, cancer, cognitive dysfunction, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and cher neuromuscular blocking drugs. The reversal of curare and other neuromuscular blocking drugs. The ceribiopacial disorder is a seizure, preferably one associated with hypoxia, anoxia or ischaemia. The neurotoxic injury associated with hypoxia, anoxia or ischaemia. The neurotoxic injury is associated with hypoxia, anoxia or ischaemia, drownings, suffocation, perinatal applyxia or hypoglycaemic events. The disorder is pain, perinatal applyxia or hypoglycaemic events. The disorder is pain, in a catte pain, persistent pain, neuropathic pain, nociceptive pain, the disorder is a catte pain, persistent pain, persisten disorder is inflammation or a cardiovascular disorder. A conotoxin peptide of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders associated with radical depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac, ocular and cerebral ischaemia and Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma; ion New O-superfamily polypeptides useful for treating voltage gated ichannel disorders, including demyelinating diseases i.e. multiple Mcintosh JM; February 20, 2007 16:53 Type: P Check: 1895 Watkins M, Hillyard DR, Cone snail O-superfamily conotoxin, Tx6.8. AAU05980 standard; peptide; 24 AA. Claim 2; Page 58; 277pp; English. CXDGGTGCDS GNQCCSGXCI FACL 28-DEC-2000; 2000WO-US035431 ischaemia; stroke; pain Conus textile 12-JUL-2001.

2000US-0214263P. 2000US-0219440P. 99US-0173754P

26-JUN-2000; 20-JUL-2000; 30-DEC-1999;

28-DEC-2000; 2000WO-US035431

12-JUL-2001

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The sequence is a cone snail O-superfamily conotoxin peptide. The peptides are useful for regulating the flow of sodium through sodium confidence are useful for regulating the flow of sodium through sodium associated with voltage gated ion Channel disorders, including associated with voltage gated ion channel disorders, including deseases i.e. multiple sclerosis, optic neuromyelitis, despending diseases i.e. multiple sclerosis, optic neuromyelitis, compression multifocal leukoencephalogatrophy, acute transverse myelitis, progressive multifocal leukoencephalogatrophy, acute transverse compelitis, progressive multifocal leukoencephalogatic leukodystrophy, compression, entrapment neuropathies i.e. corrected arrhythmias and congestive heart failure, reactive glosis.

Cordiac arrhythmias and congestive heart failure, reactive glosis, cardiac arrhythmias and congestive heart failure, reactive glosis.

Cordiac arrhythmias and congestive heart failure, reactive glosis, cardiac arrhythmias and congestive heart preferably cancer, cognitive dysfunction, neurological disorders (i.e. Eaton-Lambert syndrome) and creversal of curare and other neuromacular blocking drugs. The neurological disorder is a selaure, preferably one associated with epilepsy. The neurological disorder is a neurotoxic injury associated with the stroke, cerebrovascular accident, brain or spinal cord trauma, with hypoxia, anoxia or ischemena. The disorder is pain i.e. migraine, caute pain, persistent pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder; spain in a mammal in pain or a bout to be subjected to a pain causing event, and to treat disorders associated with cancer conders include cardiac, ocular and cerebral isoclars and cerebral isoclars and cerebral and cerebral isoclars include cardiac, ocular and cerebral isoclars and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple
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30-DEC-1999; 99US-0173754P.
26-JUN-2000; 2000US-0214263P.
20-JUL-2000; 2000US-0219440P.
27-OCT-2000; 2000US-0243412P.
                                                                                                                                                                                                                                             (UTAH ) UNIV UTAH RES FOUND. (COGN-) COGNETIX INC.
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AAU05980 Length: 24 February 20, 2007 16:53 Type: P Check: 2589 Cone snail O-superfamily conotoxin, Im6.1. !!AA_SEQUENCE 1.0 ID AAU06002 standard; peptide; 27 AA. CXDSGTSCNT GNQCCSGXCI FVCL (first entry) 24-OCT-2001 AAU06002;

Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma; ischaemia; stroke; pain.

Conus imperialis.

WO200149312-A2.

The sequence is a come shair or Superiamity Concourn percent channels in an individual and the treatment or prevention of disorders channels in an individual and the treatment or prevention of disorders channels in an individual and the treatment or prevention of disorders channels in an individual and the treatment or prevention of disorders consequence of the consequence of the consequence of disorders including demyelinating diseases i.e. multiple sclerosis, optic neuromyelitis, disseminated encephalomyelitis, darenoleukodystrophy, acute transverse consequence of the consequence of th Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma; ischaemia; stroke; pain. New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sequence is a cone snail O-superfamily conotoxin peptide. The Mcintosh JM; AAU06002 Length: 27 February 20, 2007 16:53 Type: P Check: 8003 Watkins M, Hillyard DR, Cone snail O-superfamily conotoxin, Ac6.1. XCRVXGXICG MLFXAQCCDG XCFFVCM ||AA SEQUENCE 1.0 |ID AAU06020 standard; peptide; 27 AA. Claim 2; Page 79; 277pp; English. 2000US-0243412P UNIV UTAH RES FOUND. COGNETIX INC. (first entry) Cartier GE, (revised) Jones RM; WPI; 2001-418352/44. Sequence 27 AA; (UTAH) UNIV (COGN-) COGNE 27-OCT-2000; 24-OCT-2001 BM, 06-AUG-2003 sclerosis. Layer RT, AAU06020; Olivera

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The sequence is a cone snail O-superfamily conotoxin peptide. The peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including sodium comparing diseases i.e. multiple sclerosis, optic neuromyelitis, diseases i.e. multiple sclerosis, optic neuromyelitis, diseases i.e. multiple sclerosis, optic neuromyelitis, diseases i.e. multiple sclerosing panecephalomyelitis (SSPE), metachromatic leukodystrophy, pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin poisoning, Huntington's compression, entrapment neuropathies i.e. ulnar nerve palsy, and carpal tunnel syndrome, cardiovascular disorders; i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, i.e. cardiac arrhythmias and congestive heart failure, rescrive gliosis, i.e. cardiac arrhythmias and congestive heart failure, rescrive gliosis, i.e. cardiac arrhythmias and congestive heart failure, rescrive gliosis, i.e. cardiac arrhythmias and congestive heart failure, rescrive gliosis, i.e. caversal of curare and other neuromuscular blocking drugs. The neurological disorder is a selzure, preferably one associated with hypoxia, anoxia or ischaemia. The neurotoxic injury is associated with thypoxia, anoxia or ischaemia. The neurotoxic injury is explained. The asphyxia or hypoglycaemic events. The disorder is pain in a mammal in pain or about to be cure pathic, persistent pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder. A conotoxin cardioal dancerial dancerial in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders a varied with arriver arriver.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple
                                                                                                                                                                                                                                                                                                                                                                                                            Mcintosh JM;
                                                                                                                                                                                                                                                                                                                                                                                                         Cartier GE, Watkins M, Hillyard DR,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 2; Page 84; 277pp; English.
                                                                                                                                                                                                              99US-0173754P.
2000US-0214263P.
2000US-0219440P.
                                                                                                                                                                    28-DEC-2000; 2000WO-US035431
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27-OCT-2000; 2000US-0243412P
                                                                                                                                                                                                                                                                                                                                 (UTAH ) UNIV UTAH RES FOUND.
(COGN-) COGNETIX INC.
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                                                                                                                                                                                                                                                                                                                                                                                                                                  Jones RM;
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                                                                   WO200149312-A2.
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                                                                                                                                                                                                                                                                                                                                                                                                            Olivera BM,
                                                                                                                     12-JUL-2001
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                        Conus ap.
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AAU06020 Length: 27 February 20, 2007 16:53 Type: P Check: 8377

Cone snail O-superfamily conotoxin, Da6.1. AAU05924 standard; peptide; 24 AA (first entry) (revised) ! AA SEQUENCE 1.0 06-AUG-2003 24-OCT-2001 AAU05924; SXSXEEXBX

!!AA_SEQUENCE 1.0 ID _AAU05971 standard; peptide; 29 AA.

The sequence is a cone snail O-superfamily conotoxin peptide. The peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including demyelinating diseases; ... multiple sclerosis, optic neuromyelitis, diseminated encephalomyelitis, adrenoleukodystrophy, acute transverse disseminated encephalomyelitis (SSPE), metachromatic leukodystrophy, Pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin prisoning, Huntington's, compression, entrament neuropathies i.e. ulnar crandic arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, limunosuppression, cocaine addiction, cancer, cognitive dysfunction, neurotransmitter disorders (i.e. Baton-Lambert syndrome) and crowersal of curare and other neuromuscular blocking drugs. The dysfunction, anoxia or ischaemia. The neurotoxic injury associated with hypoxia, anoxia or ischaemia. The neurotoxic injury associated with bytoxia, anoxia or ischaemia. The neurotoxic injury is associated with bytoxia, no neightored is a seizure, preferably one associated with stroke, cerebrovascular accident, brain or spinal cond trauma, myocardial infarct, physical trauma, drownings, sulfocation, persistent pain, neuropathic pain, no republe of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorder: A conotoxin persistent pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorder as constant and constant subjected to a pain causing event, and to treat disorders associated with radical depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac, ocular and carebral ischaemia and asthma. (Updated on 06-AUG-2003 to correct OS field.) Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart fallure; cancer; immunosuppression; epilepsy; asthma; ion O-superfamily polypeptides useful for treating voltage gated innel disorders, including demyelinating diseases i.e. multiple Mcintosh JM; Hillyard DR, Watkins M, Claim 2; Page 59; 277pp; English. 99US-0173754P. 20-JUL-2000; 2000US-0219440P. 27-OCT-2000; 2000US-0243412P. 28-DEC-2000; 2000WO-US035431 (UTAH) UNIV UTAH RES FOUND. Cartier GE, ischaemia; stroke; pain. (COGN-) COGNETIX INC. Layer RT, Jones RM; WPI; 2001-418352/44. Sequence 24 AA; WO200149312-A2. 30-DEC-1999; 26-JUN-2000; 12-JUL-2001. Olivera BM, sclerosis Conus sp. channel New

Type: P Check: 2357 AAU05924 Length: 24 February 20, 2007 16:53 CXDGGTGCDS GNQCCSGXCI FVCL

AAU05971;

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The sequence is a cone snail O-superfamily conotoxin propeptide. The peptides are useful for regulating the flow of sodium through sodium confidence are useful for regulating the flow of sodium through sodium confidence associated with voltage gated ion channel disorders, including associated with voltage gated ion channel disorders, including demoyelinating diseases i.e. multiple sclerosis, optic neuromyelitis, demonleukodystrophy, acute transverse myelitis, progressive multifocal leukoencephalopathy, sub acute transverse myelitis, progressive multifocal leukoencephalopathy, sub acute transverse pelizaues-Merzbacher disease, spinal cord injury, botulinum toxin poisonning, Huntington's, compression, entrapment neuropathies i.e. nerve palsy, and carpal tunnel syndrome, cardiovascular disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive glossis, cardiac arrhythmias and congestive heart failure, reactive glossis, cardiac arrhythmias and congestive heart failure, reactive glossis, cardiaced dysfunction, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and cysfunction, neurological disorder is a selaure, preferably one associated with epilepsy. The neurological disorder is a neurotoxic injury associated with the stroke, cerebrovascular accident, brain or spinal cord trauma, with hypoxia, anoxia or ischemenia. The disorder is pain infarct, physical trauma, drownings, suffocation, persistent pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder is pain in a mammal in pain or a bout to be subjected to a pain causing event, and to treat disorders associated with achieve the subjected to a pain causing event, and to treat disorders associated with achieve the disorders include cardiac, ocular and cerebral isoclass and achieve pain, and to treat disorders associated with achieve the condition of excitable membranes by activating a KaTP achieve.
                                                                                                           demyelinating disease; multiple sclerosis; Huntingdon's disease;
neuropathy; carpal tunnel syndrome; cardiovascular disorder;
congestive heart failure; cancer; immunosuppression; epilepsy; asthma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple
                                            Cone snail O-superfamily conotoxin propeptide, Delta-Striatus 106
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                                                                                           snail; O-superfamily conotoxin; sodium channel;
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26-JUN-2000; 2000US-0214263P.
20-JUL-2000; 2000US-0219440P.
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COGNETIX INC.
24-OCT-2001 (first entry)
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                                                                                                                                                                                    ischaemia; stroke; pain.
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Layer RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sclerosis.
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                                                                                             Cone
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Sequence 29 AA;

February 20, 2007 16:53 Type: P Check: 1909 AAU05971 Length: 29

LRWCIPSGDL CFRSDHIQCC SGKCAFVCL

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Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma;
                                              Cone snail O-superfamily conotoxin propeptide, Cr6.6C.
      AAU06045 standard; peptide; 31 AA
                                                                                                                                           28-DEC-2000; 2000WO-US035431
                                                                                                                                                       30-DEC-1999; 99US-0173754P.
26-JUN-2000; 2000US-0214263P.
                                                                                                                                                                    20-JUL-2000; 2000US-0219440P
27-OCT-2000; 2000US-0243412P
                                 (first entry)
                                                                                     ischaemia; stroke; pain
                                                                                                   Conus circumcisus.
                                                                                                                WO200149312-A2.
! AA SEQUENCE 1.0
                                 24-OCT-2001
                                                                                                                             12-JUL-2001
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New O-superfamily polypeptides useful for treating voltage gated i channel disorders, including demyelinating diseases i.e. multiple WPI; 2001-418352/44. N-PSDB; AAS11010. sclerosis.

Mcintosh JM;

Watkins M, Hillyard DR,

Cartier GE,

Olivera BM, Layer RT,

Jones RM;

(UTAH) UNIV UTAH RES FOUND.

(COGN-) COGNETIX INC

Claim 15; Page 91; 277pp; English.

Pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin poisoning, Huntington's, compression, entrapment neuropathies i.e. ulnar nerve palsy, and carpal tunnel syndrome, cardiovascular disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, occaine addiction, cancer, cognitive hyperglycaemia, immunosuppression, occaine addiction, cancer, cognitive dysfunction, neurotransmitter disorders (i.e. Eaton-lambert syndrome) and reversal of curare and other neuromuscular blocking drugs. The neurological disorder is a saizure, preferably one associated with retroke, cerebrovascular accident, brain or spinal cord trauma, with hypoxia, anoxia or ischemenia. The neurotoxic injury is associated with stroke, cerebrovascular accident, brain or spinal cord trauma, myocardial infarct, physical trauma, drownings, suffocation, perinatal cappropersor accident, brain or spinal cord trauma, cauphyria or hypoglycaemic events. The disorder is pain i.e. migraine, coute pain, persistent pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder. A conotoxin subjected to a pain causing event, and to treat disorder sassociated with radical depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac, ocular and cerebral ischaemia and peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis, optic neuromyelitis, disseminated encephalomyelitis, adrenoleukodystrophy, acute transverse myelitis, progressive multifocal leukoencephalopathy, sub acute sclerosing panecephalomyelitis (SSPB), metachromatic leukodystrophy, The sequence is a cone snail O-superfamily conotoxin propeptide. sthma

Sequence 31 AA;

Type: P Check: 6172 AAU06045 Length: 31 February 20, 2007 16:53

demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma; New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple Hillyard DR, Mcintosh JM; snail; O-superfamily conotoxin; sodium channel; Cone snail O-superfamily conotoxin, Tx6.10. NRLSWCIPSG DLCFPSDHIQ CCNAKCAFVC L Watkins M, | IAA SEQUENCE 1.0 | TAAU05932 standard; peptide; 25 AA. Claim 2; Page 61; 277pp; English. 26-JUN-2000; 2000US-0214263P. 20-JUL-2000; 2000US-0219440P. 27-OCT-2000; 2000US-0243412P. 28-DEC-2000; 2000WO-US035431 99US-0173754P (UTAH) UNIV UTAH RES FOUND. (COGN-) COGNETIX INC. 24-OCT-2001 (first entry) Cartier GE, ischaemia, stroke, pain. J BM, Call WPI; 2001-418352/44. WO200149312-A2. Conus textile. 30-DEC-1999; 12-JUL-2001 Layer RT, sclerosis. AAU05932; Olivera -Cone

The sequence is a cone snail O-superfamily conotoxin peptide. The peptides are useful for regulating the flow of sodium through sodium confidence are useful for regulating the flow of sodium through sodium confidence associated with voltage gated ion channel disorders, including associated with voltage gated ion channel disorders, including deseases i.e. multiple sclerosis, optic neuromyelitis, disseminated encephalomyelitis, adrenoleukodystrophy, acute transverse myelitis, progressive multifocal leukoencephalopathy, sub acute cardiaseas. Spinal cord injury, botulinum toxin poisoning, Huntington's, compression, entrapment neuropathies i.e. ulnar nerve palsy, and carpal tunnel syndrome, cardiovascular disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and cardiora arrhythmias and cohter neuromuscular blocking drugs. The currological disorder is a seizure, preferably one associated with stroke, cerebrovascular accident, brain or spinal cord trauma, with stroke, cerebrovascular accident, brain or spinal cord trauma, cardiovascular accident, brain or spinal or secondated infarct, physical trauma, drownings, suffocation, perinatal causing vente, and to creat disorder is pain. The disorder is inflammation or a cardiovascular disorder. A conocoxin certice pain, persistent pain, neuropathic pain, no about to be peptide of is useful to alleviate pain in a mannel or secondated with a redical depolarisation of excitable membranes by activating a KATP

channel, the disorders include cardiac, ocular and cerebral ischaemia and ខ្លង្គប្ល

Type: P Check: 4641 February 20, 2007 16:53 AAU05932 Length: 25 Sequence 25 AA;

CXDSGTSCNT GNQCCSGXCI FVSCL н

AAU06034 standard; peptide; 26 AA ! AA_SEQUENCE 1.0

AAU06034;

24-OCT-2001 (first entry)

Cone snail O-superfamily conotoxin, Cr6.6.

Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma; ischaemia; stroke; pain.

Conus circumcisus.

WO200149312-A2.

12-JUL-2001.

28-DEC-2000; 2000WO-US035431.

30-DEC-1999; 99US-0173754P. 26-JUN-2000; 2000US-0214263P. 20-JUL-2000; 2000US-029440P. 27-OCT-2000; 2000US-024312P.

UTAH) UNIV UTAH RES FOUND

COGN-) COGNETIX INC

Mcintosh JM; Watkins M, Hillyard DR, Cartier GE, Jones RM; Olivera BM, Layer RT,

WPI; 2001-418352/44.

New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis.

Claim 2; Page 88; 277pp; English.

The sequence is a conse small or Superiamily volucoun. Deputides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders channels in an individual and the treatment or prevention of disorders channels in an individual and the treatment or prevention of disorders demyelinating diseases i.e. multiple sclerosis, optic neuromyelitis, dispending demyelitis, progressive multifocal leukonechalopathy, acute transverse compelitis, progressive multifocal leukonechalopathy, sub acute transverse sclerosing panecephalomyelitis (SEBS), metachromatic leukodystrophy, pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin nerve palsy, and carpal tunnel syndrome, cardiovascular disorders, i.e. cardiac arrhythmias and congestive heart failure, reactive gliosis, cardiac arrhythmias and congestive heart failure, reactive gliosis, cardiac arrhythmias and congestive heart failure, cancine gliosis, cardiac arrhythmias and congestive heart failure, reactive gliosis, cardiaction, neurotransmitter disorders [i.e. Baton-Lambert syndrome) and reversal of curare and other neuronuscular blocking drugs. The neurological disorder is a neurotoxic injury is associated with hypoxia, anoxia or isolaemia. The neurotoxic injury is associated with mycoxia, anoxia or isolaemia. The neurotoxic injury is associated with hypoxia, anoxia or isolaemia, drownings, suffocation, perinatal applyxia or hypoglycaemic events. The disorder is pain; nee migraine, applyxia or hypoglycaemic events. The disorder is pain; nee migraine, acute pain, persistent pain, neuropathic pain, nociceptive pain. The sequence is a cone snail O-superfamily conotoxin peptide. The

peptide of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders associated with radical depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac; ocular and cerebral ischaemia and cardiovascular disorder. A conotoxin disorder is inflammation or a 8866666888

Sequence 26 AA;

Check: 5564 Type: P February 20, 2007 16:53 Length: 26 AAU06034

CIXSGDLCFX SDHIQCCNAK CAFVCL

Cone snail O-superfamily conotoxin propeptide, Cr6.5. SEQUENCE 1.0 AAU06035 standard; peptide; 31 AA 24-OCT-2001 (first entry) snail; AAU06035 Cone

demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma; O-superfamily conotoxin; sodium channel; ischaemia; stroke; pain

Conus circumcisus

WO200149312-A2.

12-JUL-2001

28-DEC-2000; 2000WO-US035431

2000US-0214263P. 2000US-0219440P. 2000US-0243412P. 99US-0173754P 30-DEC-1999; 26-JUN-2000; 20-JUL-2000;

27-OCT-2000;

FOUND. (UTAH) UNIV UTAH RES (COGN-) COGNETIX INC.

Watkins M, Hillyard DR, Mcintosh JM; Cartier GE, Jones RM; BW, Layer RT, Olivera

WPI; 2001-418352/44. N-PSDB; AAS11005. O-superfamily polypeptides useful for treating voltage gated ion nnel disorders, including demyelinating diseases i.e. multiple sclerosis, channel

Claim 15; Page 89; 277pp; English.

The sequence is a cone snail O-superfamily conotoxin propeptide. The peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including casociated with voltage gated ion channel disorders, including diseases i.e. multiple sclerosis, optic neuromyelitis, disseminated encephalomyelitis, adrenoleukodystrophy, acute transverse cylesesive multifocal leukoencephalopathy, sub acute cardia panecephalomyelitis (SSPB), metachromatic leukodystrophy, Pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin colerosing panecephalomyelitis (SSPB), metachromatic leukodystrophy, Pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin cardiac arrhythmias and congestive heart failure, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive cyfrenrate and other neuromuscular blocking drugs. The cereraal of curare and other neuromuscular blocking drugs. The neurological disorder is a neurotoxic injury associated epilepsy. The neurological disorder is a neurotoxic injury associated

with hypoxia, anoxia or ischaemia. The neurotoxic injury is associated with stroke, cerebrovascular accident, brain or spinal cord trauma, myocardial infarct, physical trauma, drownings, suffocation, perinatal asphyxia or hypoglycaemic events. The disorder is pain i.e. migraine, acute pain, persistent pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder. A conotoxin peptide of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders associated with radical depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac, ocular and cerebral ischaemia and

Sequence 31 AA; 88888888888888

Check: 6287 Type: P AAU06035 Length: 31 February 20, 2007 16:53

NRLSWCIPSG DLCFPSDHIQ CCSAKCAFVC

Ź AAU06043 standard; peptide; 31 !! AA SEQUENCE 1.0

AAU06043;

(first entry) 24-0CT-2001

Cone snail O-superfamily conotoxin propeptide, Cr6.6B.

Cone snail; O-superfamily conotoxin; sodium channel; demyelinating disease; multiple sclerosis; Huntingdon's disease; neuropathy; carpal tunnel syndrome; cardiovascular disorder; congestive heart failure; cancer; immunosuppression; epilepsy; asthma; ischaemia; stroke; pain.

Conus circumcisus.

WO200149312-A2

12-JUL-2001

28-DEC-2000; 2000WO-US035431

99US-0173754P, 2000US-0214263P, 30-DEC-1999; 26-JUN-2000;

2000US-0219440P. 2000US-0243412P. 20-JUL-2000;

27-OCT-2000;

(UTAH) UNIV UTAH RES FOUND.

COGNETIX INC (COGN-)

Watkins M, Hillyard DR, Mcintosh JM; Cartier GE, Jones RM; BM, Layer RT, Olivera

2001-418352/44. N-PSDB; AAS11009 WPI;

New O-superfamily polypeptides useful for treating voltage gated ion channel disorders, including demyelinating diseases i.e. multiple sclerosis.

Claim 15; Page 90; 277pp; English.

peptides are useful for regulating the flow of sodium through sodium channels in an individual and the treatment or prevention of disorders associated with voltage gated ion channel disorders, including sociated with voltage gated ion channel disorders, including diseases i.e. multiple sclerosis, optic neuromyelitis, disseminated encephalomyelitis, adrenoleukodystrophy, acute transverse myelitis, progressive multifocal leukoencephalopathy, sub acute sclerosing panecephalomyelitis (SSPB), metachromatic leukodystrophy. Pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin nerve palsy, and carpal tunnel syndrome, cardiovascular disorders, i.e. ulnar cardiac arrhythmias and congestive heart failure, reactive gliosis, cone snail O-superfamily conotoxin propeptide. sequence is a The

polypeptide.

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dysfunction, neurotransmitter disorders (i.e. Eaton-Lambert syndrome) and reversal of curare and other neuromuscular blocking drugs. The neurological disorder is a seizure, preferably one associated with epilepsy. The neurological disorder is a neurotoxic injury associated with hypoxia, anoxia or ischaemia. The neurotoxic injury is associated with stroke, cerebrovascular accident, brain or spinal cord trauma, myocardial infarct, physical trauma, drownings, suffocation, perinatal asphyxia or hypoglycaemic events. The disorder is pain, neuropathic pain, nociceptive pain. The disorder is inflammation or a cardiovascular disorder. A conotoxin peptide of is useful to alleviate pain in a mammal in pain or about to be subjected to a pain causing event, and to treat disorders associated with radical depolarisation of excitable membranes by activating a KATP channel, the disorders include cardiac, ocular and cerebral ischaemia and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention relates to an analgesic composition comprising HWAP—I polypeptide of the Chinese bird spider, Selenocosmia huwens. The composition is useful for reducing perceived pain in a subject. It is particularly useful for the treatment of subjects with joint pain, tooth pain, headaches, chest pain, neurogenic pain, myofascial pain syndrome, chronic idiopathic pain syndrome, gynaecologic pain syndrome, recurrent abdominal pain in children, and pain in cancer patients. The composition has long term analgesic effects in a subject without causing any toxic side effects. The present sequence represents S. huwena HWAP-I
    hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Analgesic composition; HWAP-I; Chinese bird spider; reducing pain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Reducing perceived pain in subject such as joint pain, headache, pain, gynecological pain, involves administering purified HWAP-I polypeptide.
                                                                                                                                                                                                                                                                                                                                                                                         Type: P Check: 5538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   joint pain; tooth pain; headache; chest pain; neurogenic pain; myofascial pain syndrome; chronic idiopathic pain syndrome; gynaecologic pain syndrome; recurrent abdominal pain; cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference 23. .25
/note= "Encoded by AGTAAA"
                                                                                                                                                                                                                                                                                                                                                                                            February 20, 2007 16:53
                                                                                                                                                                                                                                                                                                                                                                                                                                    NRLSRCIPSG DLCFPSDHIQ CCNAKCAFAC L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Selenocosmia huwena HWAP-I polypeptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADC21243 standard; peptide; 33 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 4; Page 2; 10pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13-FEB-2001; 2001US-00782704.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-APR-2000; 2000CN-00104254.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB; ADC21244, ADC21245.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-DEC-2003 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ornithoctonus huwena.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (SONG/) SONG-PING L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2001-657443/68
                                                                                                                                                                                                                                                                                                                                                                                              AAU06043 Length: 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US2003013647-A1.
                                                                                                                                                                                                                                                                                                                                                     Sequence 31 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADC21243;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
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the present inventions describes subscribed anticonflammatory, ophthalmological, antidote, antibacterial, antidoxecular, antiantiamentory, cardiant, antidabento, antiadadictive, cardiant, antidabento, antiadadictive, cardiant, antidabento, antiadadictive, cardiant, antidabento, antiadadictive, cardiant, antidadictive, relaxant, antiasthmatic, vasotropic, analgesic, antimigraine, antirheumatic, antiadaticit, dermatological, tranquilliser and neuroleptic activities.

(I) can be used as an H-ATBASS stimulator, potassium agonist and curare antagonist. (I) are useful in the treatment of multiple sclerosis, acute disseminated encephalomyelitis, optic neuromyelitis, progressive multifocal leukoencephalomyelitis, optic neuromyelitis, progressive cultifical leukoencephalomyelitis, optic neuromyelitis, metachromic leukodystrophy, pelizaeus Merzbacher disease, spinal cord injury, betulinum toxin poisoning Huntington's chorca, compression and entrapment neuropathies, cardiovascular disease, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive cyptum disorders resulting from the defects of neurotransmitter release and reversal of the actions curare and other neuromuscular blocking drugs. (I) can also be used to treat disorders associated with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pure I-conotoxin peptides isolated from venom of cone snails, useful for the regulation of the flow of potassium through potassium channels in the treatment of e.g. multiple sclerosis.
                                                                                                                                                                                                                                                                                                                                      Conotoxin, Conus, I-conotoxin, I-superfamily conotoxin, venom, antidote, cone snail; marine gastropod; neuroprotective; antiinflammatory; ophthalmological; antibacterial; anticonvulsant; muscular; antidiabetic; cardiovascular; antiarrhythmic; cardiant; immunosuppressive; nootropic; antiaddictive; cytostatic; cardiant; immunosuppressive; nootropic; antiaddictive; cathingraine; relaxant; antirheumatic; antiarthritic; dermatological; tranquilliser; neuroleptic; HATPase stimulator; potassium agonist; curare antagonist.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         present invention describes substantially pure I-conotoxin peptides
                                                                            February 20, 2007 16:53 Type: P Check: 2431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Olivera BM;
                                                                                                                                                                                                                                                                                                    Conus virgo I-superfamily conotoxin type II peptide SEQ:465.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mcintosh JM,
                                                                                                                    ACKGVFDACT PGKNECCPNR VCSDKHKWCK WKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EC,
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                                                                                                                                                            SEQUENCE 1.0
ABB88893 standard; peptide; 30 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jiminez E
Shen GS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000US-0243410P.
2000US-0246581P.
2000US-0247714P.
2001US-0264256P.
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                                                                                                                                                                                                                                                                22-MAY-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shetty R,
Jones RM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COGNETIX INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2002-171634/22.
                                                                              Length: 33
                                        Sequence 33 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-JUN-2000;
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14-NOV-2000;
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Watkins M,
                                                                                                                                                                                                                        ABB88893;
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                                                                              ADC21243
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with voltage gated ion channels, pain and a neuromuscular disorder. (I) are also useful for screening compounds that mimic the activity of an I-conotoxin. They are also useful for the treatment of autoimmune diseases, rhemmatoid arthritis, systemic lupus eryhrematosus, Alzheimer's, anxiety and schizophrenia. ABL88662 to ABL88778 and ABB88946 to ABB88934 represent sequences used in the exemplification of the present invention
excitable membranes, and disorders associated
                     depolarisation of
               radical
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8888888888888

Sequence 30 AA;

Type: P Check: 4784 February 20, 2007 16:53 ABB88893 Length: 30

CLHETSPCRR SFQCCHGICC FRRCSNSCRF

ABB88886 standard; peptide; 31 AA !!AA_SEQUENCE 1.0

ABB8886;

22-MAY-2002 (first entry)

Conus emaciatus I-superfamily conotoxin type II peptide SEQ:458.

Conotoxin, Conus, I-conotoxin; I-superfamily conotoxin, venom, antidote, cone snail; marine gastropod; neuroprotective, antiinflammatory; ophthalmological; antibacterial; anticonvulsant; muscular; antidiabetic, cardiovascular; antiarrhythmic, cardiant; immunosuppressive, nootropic, antiaddictive; cytostatic; cerebroprotective; antiasthmatic; vasotropic, antigatic; antimigraine; relaxant; antirheumatic; antiarthritic; dermatcological; tranquilliser; neuroleptic; H-ATPase stimulator; potassium agonist; curare antagonist.

Conus emaciatus.

40200202590-A2.

10-JAN-2002.

29-JUN-2001; 2001WO-US020796

30-JUN-2000; 2000US-0304166P. 27-OCT-2000; 2000US-0243410P. 08-NOV-2000; 2000US-0246581P.

2000US-0247714P 14-NOV-2000;

2001US-0264256P 29-JAN-2001;

(UTAH) UNIV UTAH RES FOUND.

COGNETIX INC COGN-)

Olivera Mcintosh JM, Jiminez EC, Shen GS; Shetty R, Jones RM, Walker CS, Watkins M,

Щ. Н

WPI; 2002-171634/22.

Pure I-conotoxin peptides isolated from venom of cone snails, useful for the regulation of the flow of potassium through potassium channels in the treatment of e.g. multiple sclerosis.

Example 3; Page 83; 260pp; English

The present invention describes substantially pure I-conotoxin peptides of 30 -50 residues (I). (I) have neuroprotective, antinflammatory, ophthalmological, antidoce, antibacterial, anticonvulsant, muscular, cardiovascular, antidarhythmic, cardiant, antidiabetic, antidaddictive, immunosuppressive, cytostatic, cardiant, antidiabetic, antidaddictive, antiasthmatic, vasotropic, analgesic, antimigraine, antirheumatic, antiathmatic, vasotropic, analgesic, antimigraine, antirheumatic, antiarthritic, dermatological, tranquilliser and neuroleptic activities antiarthritic, dermatological, tranquilliser and neuroleptic activities. (I) can be used as an H-ATPaes stimulator, potassium agonist and curare antagonist. (I) are useful in the treatment of multiple sclerosis, acute full shewhoencephalopathy, adrenoleukodystrophy, acute transverse myelitis, subacute sclerosing panencephalomyelitis, metachromic leukodystrophy, Pelizaeus-Merzbacher disease, spinal cord injury,

botulinum toxin poisoning, Huntington's chorea, compression and entrapment neuropathies, cardiovascular disease, reactive gliosis, phypregiyzaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, disorders resulting from the defects of neurotransmitter release and reversal of the actions curare and other neuromuscular blocking drugs. (I) can also be used to treat disorders associated with radical depolarisation of excitable membranes, and disorders associated with voltage gated ion channels, pain and a neuromuscular disorder. (I) are also useful for screening compounds that mimic the activity of an I-conotoxin. They are also useful for the treatment of autoimmune diseases, rheumatoid arthritis, systemic lupus eryhrematosus, Alzheimer's anxiety and schizophrenia. Abbu88662 to Abbu88678 and Abbu88654 to Abbu88934 represent sequences used in the exemplification of the present invention Sequence 31 AA;

February 20, 2007 16:53 Type: P Check: 7477 ABB88886 Length: 31

CRREGSSCRR SYQCCRKSCC IGECEFPCRW V

!!AA_SEQUENCE 1.0 ID ABB88902 standard; peptide; 30 AA.

ABB88902;

(first entry) 22-MAY-2002 Conus figulinus I-superfamily conotoxin type II peptide SEQ:474.

cone snail; marine gastropod; neuroprotective; antinflammatory; oppthalmological; antibacterial; anticonvulsant; muscular; antidabetic; cardicovascular; antidarrhythmic; cardiant; immunosuppressive; noctropic; antiaddictive; cytostatic; cardiant; immunosuppressive; noctropic; antiaddictive; cytostatic; cerebroprotective; antiasthmatic; vasotropic; antiadgicis; antimigraine; relaxant; antirheumatic; antiarthritic; dermatological; tranquilliser; neuroleptic; H-ATPase stimulator; potassium agonist; curare antagonist. Conotoxin; Conus; I-conotoxin; I-superfamily conotoxin; venom; antidote;

Conus figulinus.

WO200202590-A2.

10-JAN-2002

29-JUN-2001; 2001WO-US020796.

30-JUN-2000; 2000US-0304166P. 27-OCT-2000; 2000US-0243410P. 08-NOV-2000; 2000US-024681P. 14-NOV-2000; 2000US-0247144P. 29-JAN-2001; 2001US-0264256P.

UNIV UTAH RES FOUND. COGNETIX INC. (UTAH) UNIV (COGN-) COGNE

EW BW Olivera Mcintosh JM, Jiminez EC, Shen GS; Shetty R, Jones RM, Walker CS, Watkins M,

WPI; 2002-171634/22.

Pure I-conotoxin peptides isolated from venom of cone snails, useful for the regulation of the flow of potassium through potassium channels in the treatment of e.g. multiple sclerosis.

Example 3; Page 83; 260pp; English.

The present invention describes substantially pure I-conotoxin peptides of 30 - 50 residues (I). (I) have neuroprotective, antiinflammatory, ophthalmological, antidote, antibacterial, anticonvulsant, muscular, cardiovascular, antiarrhythmic, cardiant, antidiabetic, antiaddictive, immunosuppressive, cytostatic, nootropic, cerboroprotective, relaxant, antiasthmatic, vasocropic, analgesic, antimigraine, antirhemmatic, antiarthritic, dermatological, tranquilliser and neuroleptic activities.

antagonist. (I) are useful in the treatment of multiple sclerosis, acute antagonist. (I) are useful in the treatment of multiple sclerosis, acute disseminated encephalomyelitis, optic neuromyelitis, progressive multifocal leukoencephalomyelitis, optic neuromyelitis, progressive multifocal leukoencephalomyelicis, actute transverse myelitis, subacute sclerosing panencephalomyelitis, metachromic leukodystrophy, Pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin poisoning, Huntington's chorea, compression and entrapment neuropathies, cardiovascular disease, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, disorders resulting from the defects of neurotransmitter release and reversal of the actions curare and other neuromuscular blocking drugs. (I) can also be used to treat disorders associated with voltage gated ion channels, pain and a neuromuscular disorder. Conotoxin. They are also useful for the treatment of autoimmune diseases, rehemmatoid arthritis, systemic lupus eryhrematosus, Alzheimer's, anxiety and schizophrenia. ABL08662 to ABL08778 and ABB80546 to ABB80934 invention Pure I-conotoxin peptides isolated from venom of cone snails, useful for the regulation of the flow of potassium through potassium channels in the treatment of e.g. multiple sclerosis. Conotoxin, Conus, I-conotoxin, I-superfamily conotoxin, venom, antidote, cone snail; marine gastropod; neuroprotective, antiinflammatoxy, ophthalmological, antibacterial, anticonvulsant; muscular, antidiabetic; cardiovascular, antibarcharis, cardiant, immunosuppressive, nootropic; antiadiotive; cytostatic, carebroprotective; antiasthmatic, vasotropic; analgesic, antimigraine; relaxant, antirheumatic, antiarthritic; dermatological, tranquilliser, neuroleptic; H-ATPase stimulator; Type: P Check: 4050 Conus lynceus I-superfamily conotoxin type I peptide SEQ:405. Olivera BM; Mcintosh JM, February 20, 2007 16:53 CHHEGLPCTS GDGCCGMECC GGVCSSHCGN potassium agonist; curare antagonist Jiminez EC, Example 3; Page 82; 260pp; English. Shen GS; 30-JUN-2000; 2000US-0304166P. 27-OCT-2000; 2000US-0243410P. 08-NOV-2000; 2000US-0246581P. 2001US-0264256P 29-JUN-2001; 2001WO-US020796 2000US-0247714P (UTAH) UNIV UTAH RES FOUND. (revised)
(first entry) Shetty R, Jones RM, COGNETIX INC WPI; 2002-171634/22. ABB88902 Length: 30 Sequence 30 AA; WO200202590-A2. 08-NOV-2000; 29-JAN-2001; 07-AUG-2003 22-MAY-2002 Walker CS, Watkins M, 10-JAN-2002 ABB88833; Conus sp. (COGN-) -

The present invention describes substantially pure 1-conocoran peptices of 30 -50 residues (1). (1) have neuroprotective, antiinflammatory, cophthalmological, antidote, antibacterial, antidiabelic, antiaddictive, cardiant, antidiabelic, antiaddictive, cardiant, antidiabelic, antiaddictive, cardiant, antidiabelic, antiaddictive, cantiathmatic, analogues, cytostatic, noctropic, cerebroprotective, relaxant, antiarthritic, dermacological, tranquillieer and neuroleptic activities. (C antiagonist. (I) are useful in the treatment of multiple sclerosis, acute disseminated encephalomyelitis, optic neuromyelitis, progressive complities, subacute sclerosing panencephalomyelitis, metachromic leukodystrophy, Pelizaeus-Merzbacher disease, spinal cord injury, beutulnum toxin poisoning, Huntington's chores, compression and entrapment neuropathies, cardiovascular disease, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive codysfunction, disorders resulting from the defects of neurorumscular disorders associated with voltage gated ion channels pain and a neuromuscular disorder. (C radical depolarisation of exceptible membranes, and disorders associated with voltage gated ion channels, pain and a neuromuscular disorder. (C conotoxin. They are also useful for the treatment of autoimumune disease, conotoxin. They are also useful for the treatment of autoimumune disease, conotoxin, and sublemer of encorance of enc cone snail; marine gastropod; neuroprotective; antiinflammatory; ophthalmological; antibacterial; anticonvulsant; muscular; antidiabetic; cardiovascular; antiarthythmic; cardiant; immunosuppressive; nootropic; antiaddictive; cytostatic; cerebroprotective; antiasthmatic; vasotropic; analgesic; antimigraine; relaxant; antirheumatic; antiarthritic; dermatological; tranquilliser; neuroleptic; H-ATPase stimulator; Conctoxin; Conus; I-conotoxin; I-superfamily conotoxin; venom; antidote; present invention describes substantially pure I-conotoxin peptides Conus striolatus I-superfamily conotoxin type II peptide SEQ:481 ABB88833 Length: 38 February 20, 2007 16:53 Type: P Check: 4508 Olivera BM; Mcintosh JM, NWSWCSGSGE GCDYHSECCG ERCCIESMCI GDGVACWP (Updated on 07-AUG-2003 to correct OS field.) potassium agonist; curare antagonist Jiminez EC, Ā Shen GS; ABB88909 standard; peptide; 30 30-JUN-2000; 2000US-0304166P. 27-OCT-2000; 2000US-0243410P. 08-NOV-2000; 2000US-02455BIP. 14-NOV-2000; 2000US-0247714P. 29-JUN-2001; 2001WO-US020796. 29-JAN-2001; 2001US-0264256P. (UTAH) UNIV UTAH RES FOUND (first entry) Shetty R, Jones RM, (COGN-) COGNETIX INC Conus striolatus. Sequence 38 AA; WO200202590-A2. ! AA_SEQUENCE 1.0 22-MAY-2002 10-JAN-2002. Walker CS, Watkins M, ABB88909;

WPI; 2002-171634/22

Pure I-conotoxin peptides isolated from venom of cone snails, useful for the regulation of the flow of potassium through potassium channels in the treatment of e.g. multiple sclerosis.

Example 3; Page 83; 260pp; English.

The present invention describes substantially pure I-conotoxin peptides of 30 -50 residues (I). (I) have neuroprotective, antinflammatory, ophthalmological, antidoce, antibacterial, antidochiant, muscular, cardious, antidochiant, antidochiant, antidochiant, muscular, cardiouscular, antidachiantic, cardiouscular, antidachiantic, rasiduatic, analgesic, antimidratic, antinidizatine, antinidactive, antiathritic, dermatological, tranquilliser and neuroleptic activities. (I) can be used as an H-ATPase stimulator, potassium agonist and curare antagonist. (I) are useful in the treatment of multiple sclerosis, acute disseminated encephalomyelitis, optic neuromyelitis, progressive multifocal leukoencephalopathy, acrenleukodystrophy, acute transverse multifocal leukoencephalopathy, acrenleukodystrophy, acute transverse myelitis, subacute sclerosing panencephalomyelitis, metachromic leukodystrophy, Pelizaeus-Warzbacher disease, spinal cord injury, botulinum toxin poisoning, Huntington's chorea, compression and entrapment neuropathies, cardiovascular disease, reactive gliosis, hyperstylycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, disorders resulting from the defects of neurotransmitter release and reversal of the actions curare and other neuromuscular blocking drugs. (I) can also be used to treat disorders associated with voltage gated ion channels, pain and a neuromuscular disorder. (I) are also useful for the treatment of autoimmune diseases, rheumatoid arthritis, systemic lupus eryhrematosus, Alzheimer's, anxiety and schizophrenia. Absubsect to the present invention cepresent sequences used in the exemplification of the present invention

Sequence 30 AA;

ABB88909 Length: 30 February 20, 2007 16:53 Type: P Check: 4452

CHHEGLPCSS DDGCCGMECC NGVCSSSCGN

!!AA_SEQUENCE 1.0 ID ABB88884 standard; peptide; 30 AA.

ABB8884;

22-MAY-2002 (first entry)

Conus emaciatus I-superfamily conotoxin type II peptide SEQ:456.

Conotoxin, Conus, I-conotoxin, I-superfamily conotoxin, venom; antidote, cone snail; marine gastropod; neuroprotective; antiinflammatory; ophthalmological; antibacterial; anticonvulsant; muscular; antidiabetic; cardiovascular; antiarhythmic; cardiant; immunosupressive; nootropic; antiaddictive; cytostatic; cerebroprotective; antiasthmatic; vasotropic; analgesic; antimigraine; relaxant; antirheumatic; antiarthritic; dermatological; tranquilliser; neuroleptic; H-ATPase stimulator; potassium agonist; curare antagonist

Conus emaciatus.

WO200202590-A2.

10-JAN-2002

30-JUN-2000; 2000US-0304166P. 27-OCT-2000; 2000US-0243410P. 08-NOV-2000; 2000US-024681P. 14-NOV-2000; 2000US-0247714P. 29-JAN-2001; 2001US-0264256P. 29-JUN-2001; 2001WO-US020796

(UTAH) UNIV UTAH RES FOUND

(COGN-) COGNETIX INC

Olivera BM; Mcintosh JM, EC, Jiminez E Shen GS; Shetty R, Jones RM, Walker CS, Watkins M,

WPI; 2002-171634/22.

Pure I-conotoxin peptides isolated from venom of cone snails, useful for the regulation of the flow of potassium through potassium channels in the treatment of e.g. multiple sclerosis.

Example 3; Page 83; 260pp; English.

The present invention describes substantially pure 1-conotoxin peptides of 30 -50 residues (1). (1) have neuroprotective, antinflammatory, ophthalmological, antidote, antidoterial, anticonvulsant, muscular, cardiousscular, antidoteria, antidoteria, antidoteria, antidoteria, antidoteria, antidoteria, antidoteria, antidoteria, antidoteria, cardiouspressive, cycostatic, noctropic, cerebroprotective, relaxant, antidathmic, dermatological, tranquilliser and neuroleptic activities. Cardiarthritic, dermatological, tranquilliser and neuroleptic activities. Cardiarthritic, dermatological, tranquilliser and neuroleptic activities. Cardiarthritic, dermatological, tranquilliser and neuroleptic activities. Cardiardencephalomyelitis, optic neuromyelitis, progressive multifocal leukoencephalomyelitis, optic neuromyelitis, progressive multifocal leukoencephalomyelitis, optic neuromyelitis, progressive multifocal leukoencephalopathy, actenoleukodystrophy, acute transverse multifocal leukoencephalopathy, actenoleukodystrophy, acute transverse myelitis, subacute sclerosing panencephalomyelitis, metachromic leukoencephalopathy, huntington's chorea, compression and entrapment neuropathies, cardiovascular disease, spinal cord injury, botulinum toxin poisoning, Huntington's chorea, compression and entrapment neuropathies, cardiovascular disease, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, compression and dysfunction, disorders resulting from the defects of neurotransmitter release and reversal of the actions curare and other neuromuscular blocking drugs. (1) can also be used to treat disorders associated with voltage gated ion channels, pain and a neuromuscular disorder. Contoxin. They are also useful for the treatment of autoimmune diseases, theumatoid arthritis, systemic lupus eryhrematosus, Alzheimer's anxiety and schizophrenia. AbisBa862 to AbisB88934 to AbbB88934 contoxing the exemplification of the present invention

Sequence 30 AA;

ABB88884 Length: 30 February 20, 2007 16:53 Type: P Check: 4784

CLHETSPCRR SPQCCHGICC FRRCSNSCRF

ABB88900 standard; peptide; 31 AA. !!AA_SEQUENCE 1.0

ABB88900;

22-MAY-2002 (first entry)

Conus figulinus I-superfamily conotoxin type II peptide SEQ:472.

Conotoxin, Conus, I-conotoxin, I-superfamily conotoxin, venom, antidote, cone snail; marine gastropod, neuroprotective, antiinflammatory; ophthalmological; antibacterial; anticonvulsant, muscular; antidiabetic, cardiaut; antiarrythmic; cardiaut; immunosuppressive; nootropic, antiaddictive; cytostatic; cardiaut; immunosuppressive; nootropic, antiaddictive; cytostatic; carebroprotective; antiasthmatic; vasotropic; dermalgesic; antimigraine; relaxant; antirheumatic; antiarthritic; dermatological; tranquilliser; neuroleptic; H-ATPase stimulator; potassium agonist; curare antagonist.

Conus figulinus

WO200202590-A2.

10-JAN-2002.

29-JUN-2001; 2001WO-US020796

30-JUN-2000; 2000US-0304166P

10-JAN-2002

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The present invention describes substantially pure I-conotoxin peptides of 30 -50 residues (I). (I) have neuroprotective, antinflammatory, copthalmological, antidoce, antibacterial, anticonvulsant, muscular, cardioard, antionvulsant, antidadictive, cardioard, antidabetic, antiaddictive, immunosuppressive, cytostatic, nootropic, cerebroprotective, relaxant, antistrhutic, dermatological, tranquilliser and neuroleptic activities. (I) can be used as an H-ATPase simulator, potassium agonist and curare antagonist. (I) are useful in the treatment of multiple solerosis, acute disseminated encephalopathy, adrenoleukodystrophy, polisaeus-werzbacher disease, spinal cord injury, betulinum toxin poisoning, Huntington's chorea, compression and entrapment neuropathies, cardiovacular disease, reactive gliosis, hyperdyscamia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, disorders resulting from the defects of neurotransmitter release and reversal of the actions curare and other neuromuscular blocking drugs. (I) can also be used to treat disorders associated with voltage gated ion channels, pain and a neuromuscular disorder. Conotoxin. They are also useful for the treatment of autoimune disease, they are also useful for the treatment of autoimune diseases, cheumatoid arthritis, systemic lubus erythermatosus, Alzheimer's, anxiety and schizophrenia. AbL88662 to AbL88778 and AbB88546 to ABB88934 crepresent invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pure I-conotoxin peptides isolated from venom of cone snails, useful for
the regulation of the flow of potassium through potassium channels in the
treatment of e.g. multiple sclerosis.
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                                                                                                                                                                                                                                                                                     Jiminez E
Shen GS;
08-NOV-2000; 2000US-0246581P.
14-NOV-2000; 2000US-0247714P.
29-JAN-2001; 2001US-0264256P.
                                                                                                                                                                 UTAH ) UNIV UTAH RES
                                                                                                                                                                                                                                                                                 Shetty R,
Jones RM,
                                                                                                                                                                                                      COGNETIX INC
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                                                                                                                                                                                                                                                                                     Walker CS,
Watkins M,
                                                                                                                                                                                                      COGN-)
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Conotoxin, Conus, I-conotoxin, I-superfamily conotoxin, venom; antidote, cone snail; marrine gastropod; neuroprotective, antiinflammatoxy, ophthalmological; antibacterial; anticonvulsant; muscular; antidiabetic; cardiovascular; antiarrhythmic; cardiant; immunosuppressive; nootropic; antiadioticive; cytostatic; cerebroprotective; antiasthmatic; vasotropic; analgesic; antimipatane; relaxant; antirheumatic; antiatthmatic; vasotropic; dermatological; trangulaliser; neuroleptic; H-ATPase stimulator; Conus virgo I-superfamily conotoxin type II peptide SEQ:467. CRAEGVRCEF DSQCCESECC MGSCANPCRI potassium agonist; curare antagonist. ABB88895 standard; peptide; 30 AA 22-MAY-2002 (first entry) !! AA SEQUENCE 1.0 ABB8895;

WO200202590-A2

Conus virgo.

The present invention describes subsciritaria, antiinflammatory, ophthalmological, antidote, antibacterial, anticonvulsant, muscular, cardiant, antidiabenic, antiaddictive, cardiant, antidiabenic, antiaddictive, immunosuppressive, cytostatic, cardiant, antidiabenic, antiaddictive, antiarchritic, dermatological, tranquilliser and neuroleptic activities. (I) can be used as an H-ATPase stimulator, potassium agonist and curare antiagonist. (I) are useful in the treatment of multiple sclerosis, acute disseminated encephalogyptins, optic neuromyelitis, progressive multifocal leukoencephalogypthy, adrencephalogyptic, acute transverse comultifocal leukoencephalogyptik, adrenoleukodystrophy, pelizaeus-Merzbacher disease, spinal cord injury, leukodystrophy, Pelizaeus-Merzbacher disease, spinal cord injury, belizaeus-Merzbacher disease, spinal cord injury, chrystilnum toxin poisoning, Huntington's chorcus congression and entrapment neuropathies, cardiovascular disease, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive cordystrophy, disorders resulting from the defects of neurorensemitter release and reversal of the actions curare and other neuromuscular compounds darder also useful for screening compounds that mimic the activity of an I-creat also useful for screening compounds that mimic the activity of an I-creat sequences useful for the treatment of autoimmune disease, contoxin. They are also useful for the treatment of autoimmune diseases, chrematoid arthritis, systemic lupus eryhrematosular disorder. Inventation of excitable membranes, and disorders associated contoxin. They are also useful for the treatment of autoimmune diseases, contoxin, they are also useful for the treatment of autoimmune diseases.

Creptesent sequences used in the exemplification of the present invention Pure I-conotoxin peptides isolated from venom of cone snails, useful for the regulation of the flow of potassium through potassium channels in the treatment of e.g. multiple sclerosis. present invention describes substantially pure I-conotoxin peptides Conus figulinus I-superfamily conotoxin type II peptide SEQ:475. ABB88895 Length: 30 February 20, 2007 16:53 Type: P Check: 4856 Olivera BM; Jiminez EC, Mcintosh JM, Shen GS; CLHETPPCRR SFQCCHGNCC FRRCSNSCRF Example 3; Page 83; 260pp; English. !!AA SEQUENCE 1.0 ID \ABB89903 standard; peptide; 30 AA. 2000US-0243410P. 2000US-0246581P. 2000US-0247714P. 2001US-0264256P. 29-JUN-2001; 2001WO-US020796 2000US-0304166P (UTAH) UNIV UTAH RES FOUND 22-MAY-2002 (first entry) Shetty R, Jones RM, COGNETIX INC WPI; 2002-171634/22. Sequence 30 AA; 29-JAN-2001; 08-NOV-2000; .2000; 14-NOV-2000; 30-JUN-2000; Walker CS, Watkins M, (COGN-)

Conotoxin; Conus; I-conotoxin; I-superfamily conotoxin; venom; antidote; cone snail; marine gastropod; neuroprotective; antiinflammatory; ophthalmological; antibacterial; anticonvulsant; muscular; antidiabetic; cardiovascular; antiarrhythmic; cardiant; immunosuppressive; nootropic; antiaddictive; cytostatic; cerebroprotective; antiasthmatic; vasotropic; analgesic; antimigraine; relaxant; antirheumatic; antiarthritic;

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Conus virgo I-superfamily conotoxin type II peptide SEQ:468.
                                                                                                                                                                                                                                                                                                                                                                                  February 20, 2007 16:53
                                                                                                                                                                                                                                                                                                                                                                                              CHHEGLPCAS DDGCCGMECC GGVCSSHCGN
                                                                                                                                                                                  Example 3; Page 83; 260pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE 1.0
ABB88896 standard; peptide; 30 AA.
                                                                                    14-NOV-2000; 2000US-0247714P.
29-JAN-2001; 2001US-0264256P.
                                                                       2000US-0243410P.
2000US-0246581P.
                                                      29-JUN-2001; 2001WO-US020796
                                                                                                      (UTAH ) UNIV UTAH RES FOUND.
                                                                                                                                                                                                                                                                                                                                                                                                                                         22-MAY-2002 (first entry)
                                                                                                                          Shetty R,
Jones RM,
                                                                                                              COGNETIX INC
                                                                                                                                             WPI; 2002-171634/22.
                 Conus figulinus.
                                                                                                                                                                                                                                                                                                                                                                                  Length: 30
                              WO200202590-A2.
                                                                                                                                                                                                                                                                                                                                                                     Sequence 30 AA;
                                                                   30-JUN-2000;
                                                                        27-OCT-2000;
08-NOV-2000;
                                          10-JAN-2002
                                                                                                                          Walker CS,
Watkins M,
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                                                                                                              (COGN-)
                                                                                                                                                                                                                                                                                                                                                                                  ABB88903
XXXXXXXX
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Conotoxin, Conus, I-conotoxin, I-superfamily conotoxin, venom; antidote, cone snail; marine gastropod, neuroprotective, antidilammatory; ophthalmological; antidacterial; anticonvulsant; muscular; antidiabetic; cardiaut; antiarrhythmic; cardiant; immunosuppressive; nototropic, antiaddictive; cytostatic; cardiant; immunosuppressive, nootropic, antiaddictive; cytostatic; cerebroprotective; antiasthmatic; vasotropic; dermalgesic; antimigraine; relaxant; antirheumatic; antiarthritic; dermatcological; tranquilliser; neuroleptic; H-ATPase stimulator; potassium agonist; curare antagonist. 2000US-0243410P. 2000US-0246581P. 2000US-0247714P. 29-JUN-2001; 2001WO-US020796 2000US-0304166P 2001US-0264256P (UTAH) UNIV UTAH RES FOUND. Shetty R, Jones RM, COGNETIX INC WPI; 2002-171634/22 WO200202590-A2. 27-OCT-2000; 08-NOV-2000; 14-NOV-2000; 29-JAN-2001; 30-JUN-2000; Conus virgo. 10-JAN-2002 Walker CS, Watkins M, (COGN-) The present invention describes substantially pure I-conotoxin peptides of 30 -50 residues (I). (I) have neuroprotective, antinflammatory, ophthalmological, antidote, antibacterial, anticonvulsant, muscular, cardiovascular, antidote, antibacterial, antidotein, muscular, immuscular, antidotein, reschooling antiathritic, dermatological, tranquilliser and neuroleptic activities. (I) can be used as an H-ATPase stimulator, potassium agonist and curare antagonist. (I) are useful in the treatment of multiple sclerosis, acute disseminated encephalomyelitis, optic neuromyelitis, progressive multifocal leukoencephalopathy, adrenoleukodystrophy, acute transverse multifocal leukoencephalopathy, adrenoleukodystrophy, acute transverse multifocal leukoencephalopathy, adrenoleukodystrophy, acute transverse peutilinum toxin poisoning Huntington's chorea, compression and centrapment neuropathies, cardiovascular disease, reactive gliosis, botulinum toxin poisoning, Huntington's chorea, compression and entrapment neuropathies, cardiovascular disease, reactive gliosis, hyperalycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, disorders resulting from the defects of neurotransmitter release and reversal of the actions curare and other neuromuscular blocking drugs. (I) can also be used to treat disorders associated with voltage gated ion channels, pain and a neuromuscular disorder. Contoxin. They are also useful for the treatment of autoimume diseases, rheumatoid arthritis, systemic lupus eryhrematosus, Alzheimer's anxiety and schizophrenia. ABL88652 to ABL88778 and ABB888546 to ABB88934 con eryhrention Pure I-conotoxin peptides isolated from venom of cone snails, useful for the regulation of the flow of potassium through potassium channels in the treatment of e.g. multiple sclerosis. dermatological; tranquilliser; neuroleptic; H-ATPase stimulator; Type: P Check: 3846 Olivera BM; Jiminez EC, Mcintosh JM, Shen GS; potassium agonist; curare antagonist

Olivera BM;

Mcintosh JM,

Jiminez EC, Shen GS;

The present invention describes substantially pure I-conotoxin peptides of 30 -50 residues (I). (I) have neuroprotective, antinflammatory, capthalmological, antidoce, antibacterial, antidabetic, antidaddictive, capthalmological, antidactive, antidabetic, antidaddictive, cardiorascular, antidathatic, antidathatic, antidathatic, vasotropic, antidapanic, antidaddictive, antidathathic, vasotropic, analgesic, antidapanic, antidathatic, cardioraterior, analgesic, antidapanic, antidathatic, dermatological, tranquilliser and neuroleptic activities.

(I) can be used as m H-ATPase stimulator, potassium agonist and curare antidathritic, dermatological, tranquilliser and neuroleptic activities.

(I) can be used as m H-ATPase stimulator, potassium agonist and curare antidonisted encephalomyelitis, optic neuromyelitis, progressive multifocal leukodacheplalomyelitis, optic neuromyelitis, metachromic contuiting toxin poisoning, Huntington's chorea, compression and cleukodystrophy, Pelizaeus-Marzbacher disease, spinal cord injury, botulinum toxin poisoning, Huntington's chorea, compression and chrapment neuropathies, cardiovascular disease, reactive gliosis, chypersylycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, disorders resulting from the defects of neurormanitter. Pure I-conotoxin peptides isolated from venom of cone snails, useful for the regulation of the flow of potassium through potassium channels in the treatment of e.g. multiple sclerosis. blocking drugs. (I) can also be used to treat disorders associated with radical depolarisation of excitable membranes, and disorders associated with voltage gated ion channels, pain and a neuromuscular disorder. (I) are also useful for screening compounds that mimic the activity of an I-conotoxin. They are also useful for the treatment of autoimmune diseases, rheumatois arthritis, systemic lupus eryhematosus, Alzheimer's and schizophrenia. ABL88662 to ABL88778 and ABB86546 to ABB88934 represent sequences used in the exemplification of the present invention useful Example 3; Page 83; 260pp; English.

Sequence 30 AA;

ABB88896 Length: 30 February 20, 2007 16:53 Type: P Check: 4685

CLHETSPCGR SPQCCHGICC FRRCSNSCRF

ABB88901;

1 CRAEGVYCEY GSQCCLSQCC MASCANPCRH

cone snail; marine gastropod; neuroprotective; antiinflammatory; ophthalmological; antibacterial; anticonvulsant; muscular; antidiabetic; cardiovascular; antiarrhythmic; cardiant; immunosuppressive; nootropic; antiaddictive; cytostatic; carebroprotective; antimigratine; relaxant; antirheumatic; antiarthritic; dermatological; tranquilliser; neuroleptic; H-ATPase stimulator; Conotoxin; Conus; I-conotoxin; I-superfamily conotoxin; venom; antidote; Conus figulinus I-superfamily conotoxin type II peptide SEQ:473. potassium agonist; curare antagonist Jiminez EC, Shen GS; 2000US-0243410P. 2000US-0246581P. 2000US-0247714P. 2000US-0304166P 2001US-0264256P 29-JUN-2001; 2001WO-US020796 UNIV UTAH RES FOUND 22-MAY-2002 (first entry) Shetty R, Jones RM, COGNETIX INC WPI; 2002-171634/22. Conus figulinus. WO200202590-A2 30-JUN-2000; 27-OCT-2000; 08-NOV-2000; 14-NOV-2000; 29-JAN-2001; 10-JAN-2002 Walker CS, Watkins M, (UTAH) (COGN-)

cardiovascular, antiarrhythmic, cardiant, antidiabetic, antiaddictive, immunosuppressive, cytostatic, nootropic, cerebroprotective, relaxant, antiatrhmitic, vasotropic, cardiant, antidiabetic, antiaddictive, immunosuppressive, cytostatic, nootropic, cerebroprotective, relaxant, antiatrhritic, vasotropical, analgesic, antimiparaine, antirhmentic.

(I) can be used as an H-ATPase stimulator, potassium agonist and curare antiatrhritic, dermatological, tranquilliser and neuroleptic activities.

(I) can be used as an H-ATPase stimulator, potassium agonist and curare antisseminated encephalomyelitis, optic neuromyelitis, progressive multifocal leukoencephalomyelitis, optic neuromyelitis, progressive myelitis, subacute sclerosing panencephalomyelitis, metachromic leukodystrophy, Pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin poisoning, Huntington's chorea, compression and entrapment neuropathies, cardiovascular disease, reactive gliosis, hyperaglycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, disorders resulting from the defects of neurorransmitter. Pure I-conotoxin peptides isolated from venom of cone snails, useful for the regulation of the flow of potassium through potassium channels in the treatment of e.g. multiple sclerosis. blocking drugs. (I) can also be used to treat disorders associated with radical depolarisation of excitable membranes, and disorders associated with voltage gated ion channels, pain and a neuromuscular disorder. (I) are also useful for screening compounds that mimic the activity of an I-conotoxin. They are also useful for the treatment of autoimmune diseases, themacoid arthritis, systemic lupus eryhremacosus, Albreimer's, anxiety and schizophrenia. Abla8662 to Abla8778 and Abb88846 to Abb888934 represent sequences used in the exemplification of the present invention The present invention describes substantially pure I-conotoxin peptides of 30 -50 residues (I). (I) have neuroprotective, antiinflammatory, ophthalmological, antidote, antibacterial, anticonvulsant, muscular, Example 3; Page 83; 260pp; English.

ABB88901 Length: 31 February 20, 2007 16:53 Type: P Check: 6985

Sequence 31 AA;

The present invention describes substantially pure I-conotoxin peptides of 30 -50 residues (I). (I) have neuroprotective, antinflammatory, coffinal molecular, antidoche antidochematic, cardiarthritic, dermatological, tranquilliser and neuroleptic activities. (I) can be used as an H-ATPase stimulator, potassium agonist and curare antiarthritic, dermatological, tranquilliser and neuroleptic activities. (I) can be used as an H-ATPase stimulator, potassium agonist and curare antismented encephalomyelitis, optic neuromyelitis, progressive myelities, subscure scleroshing panencephalomyelitis, netafromic (I) eleukodystrophy, Pelizaeus-Merzbacher disease, spinal cord injury, botulinum toxin poisoning, Huntington's chorea, compression and entrapment neuropathies, cardiovascular disease, spinal cord injury, botulinum toxin poisoning, Huntington's chorea, compression and entrapment neuropathies, cardiovascular disease, reactive gliosis, cordine addiction, cancer, cognitive dysfunction, disorders resulting from the defects of neurotransmitter release and reversal of the actions curare and other neuromenscular of the actions curare and other neuromenscular (I) cardial depolarisation of excitable membranes, and disorders associated with voltage gated ion channels, pain and a neuromescular (I) care also useful for screening compounds that mimic the activity of an I-cordoxin. They are also useful for the treatment of autoimmuned seases, rehematoid arthritis, systemic lupus eryhrematosus, Alzheimer's, anxiety Pure I-conotoxin peptides isolated from venom of cone snails, useful for the regulation of the flow of potassium through potassium channels in the treatment of e.g. multiple sclerosis. cone snail; marine gastropod; neuroprotective; antiinflammatory; ophthalmological; antibacterial; anticonvulsant; muscular; antidabetic; cardiovascular; antiatrhythmic; cardiant; immunosuppressive; nootropic; antiaddictive; cytostatic; cerebroprotective; antiasthmatic; vasotropic; analgesic; antimigraine; relaxant; antirheumatic; antiarthritic; dermatological; tranquilliser; neuroleptic; H-ATPase stimulator; Conotoxin; Conus; I-conotoxin; I-superfamily conotoxin; venom; antidote; Conus figulinus I-superfamily conotoxin type II peptide SEQ:471. Olivera BM; Mcintosh JM, potassium agonist; curare antagonist Щ, Example 3; Page 83; 260pp; English. !!AA_SEQUENCE 1.0 ID ABB88899 standard; peptide; 30 AA Jiminez E Shen GS; 2000US-0243410P. 2000US-0246581P. 2000US-024714P. 29-JUN-2001; 2001WO-US020796 29-JAN-2001; 2001US-0264256P 2000US-0304166P FOUND 22-MAY-2002 (first entry) Shetty R, Jones RM, (UTAH) UNIV UTAH RES (COGN-) COGNETIX INC. WPI; 2002-171634/22. Conus figulinus. WO200202590-A2 :0-JUN-2000; 08-NOV-2000; 27-OCT-2000; L4-NOV-2000; 10-JAN-2002. Walker CS, Watkins M, ABB88899;

Olivera BM;

Mcintosh JM,

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The present invention describes substantially pure I-conotoxin peptides of 30 -50 residues (I). (I) have neuroprotective, antiinflammatory, cophthalmological, antidote, antibacterial, anticonvulsant, muscular, cardiovascular, antiarrhythmic, acardiant, anticonvulsant, muscular, cardiovascular, antiarrhythmic, antidated; antiadottic, antiadottic, antiadottic, vasotropic, cerebroprotective, relaxant, antiasthmatic, vasotropic, antiagraine, antirheumatic, antiatrhitic, dermatological, tranquilliser and neuroleptic activities. (I) can be used as an H-ATPase stimulator, potassium agonist and curare antagonist. (I) are useful in the treamment of multiple sclerosis, acute disseminated encephalomyelitis, optic neuromyelitis, progressive convelities, subacute sclerosing panencephalomyelitis, metachromic leukodystrophy, Pelizaeus-Merzbacher disease, spinal cord injury, betulinum toxin poisoning, Huntington's chorea, compression and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            venom of cone snails, useful for
through potassium channels in the
                  represent sequences used in the exemplification of the present invention
                                                                                                                                                                                                                                                                                                                                                                  cone snail; marine gastropod; neuroprotective; antiinflammatory; oppthalmological; antibacterial; antibacterial; antibacterial; cardiaut; antiarthythmic; cardiaut; immunosuppressive; nootropic; antiaddictive; cytostatic; cerebroprotective; antiasthmatic; vasotropic; antiaddictive; cytostatic; cerebroprotective; antiasthmatic; vasotropic; antiagraine; relaxant; antificumatic; antiarthritic; dermatcological; tranquilliser; neuroleptic; H-ATPase stimulator; potassium agonist; curare antagonist.
                                                                                                                                                                                                                                                                                                                                                    Conotoxin; Conus; I-conotoxin; I-superfamily conotoxin; venom; antidote;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entrapment neuropathies, cardiovascular disease, reactive gliosis, hyperglycaemia, immunosuppression, cocaine addiction, cancer, cognitive dysfunction, disorders resulting from the defects of neurotransmitter release and reversal of the actions curare and other neuromuscular
to ABL88778 and ABB88546 to ABB88934
                                                                                            Type: P Check: 4017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Olivera BM;
                                                                                                                                                                                                                                                                                                            Conus virgo I-superfamily conotoxin type II peptide SEQ:469.
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                                                                                              February 20, 2007 16:53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the regulation of the flow of potassium treatment of e.g. multiple sclerosis.
                                                                                                                                  CHHEGLPCTS DDGCCGMECC GGVCSSHCGN
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Shen GS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 3; Page 83; 260pp; English
                                                                                                                                                                     !!AA_SEQUENCE 1.0
ID ABB88897 standard; peptide; 30 AA.
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2000US-0246581P.
2000US-0247714P.
2001US-0264256P.
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schizophrenia. ABL88662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FOUND.
                                                                                                                                                                                                                                                                     22-MAY-2002 (first entry)
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Jones RM,
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                                                                                            ABB88899 Length: 30
                                                        Sequence 30 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200202590-A2.
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08-NOV-2000;
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                                                                                                                                                                                                                                 ABB8897;
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and
ន្តដ្តប្ត
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radical depolarisation of excitable membranes, and disorders associated with voltage gated ion channels, pain and a neuromuscular disorder. (1) are also useful for screening compounds that mimic the activity of an I-conotoxin. They are also useful for the treatment of autoimmune diseases, rheumatoid arthritis, systemic lupus eryhrematosus, Alzheimer's, anxiety and schizophrenia. Abla8662 to Abl88778 and Abb888546 to Abb888934 represent sequences used in the exemplification of the present invention The invention comprises peptides having calcium channel blocking activities which are derived from the venomous saliva of assassin bugs. The calcium channel blocking peptides of the invention are useful for treating stenocardia, hypertension, myocarditis, arrhythmia and cerebral ischaemia. The present amino acid sequence represents an assassin bug calcium channel blocking peptide of the invention A new peptide derived from venomous saliva of assassin bug, has calcium channel blocking activity. (I) can also be used to treat disorders associated with Assassin bug; venomous saliva; calcium channel blocking activity; stenocardia; hypertension; myocarditis; arrhythmia; cerebral ischaemia. , venomous saliva, calcium channel blocking activity; hypertension; myocarditis; arrhythmia; cerebral ischaemia. Agriosphodrus dohrni (assassin bug) calcium channel blocking peptide. Isyndus obscurus (assassin bug) calcium channel blocking peptide. Check: 7710 Type: P Check: 4835 AA015120 Length: 35 February 20, 2007 16:53 Type: P ADDDCLPRGS KCLGENKQCC KGTTCMFYAN RCVGV ABB88897 Length: 30 February 20, 2007 16:53 CLYETSPCRR SFQCCHGICC FRRCSNSCRF Š standard; peptide; 36 AA. Claim 7; Page 2; 26pp; Japanese. AAO15120 standard; peptide; 35 01-SEP-2000; 2000JP-00266187. 01-SEP-2000; 2000JP-00266187. (first entry) (first entry) Agriosphodrus dohrni WPI; 2002-421068/45. (SUNR) SUNTORY LID Isyndus obscurus blocking drugs. Sequence 30 AA; JP2002080499-A. Sequence 35 AA; Assassin bug; stenocardia; 22-AUG-2002 22-AUG-2002 19-MAR-2002 AA015121; AA015120; ! ! AA SEQUENCE !! AA SEQUENCE AA015121 8888888888888 \$2 \cdot \cd

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The invention comprises peptides having calcium channel blocking activities which are derived from the venomous saliva of assassin bugs. The calcium channel blocking peptides of the invention are useful for treating stenocardia, hypertension, myocarditis, arrhythmia and cerebral ischaemia. The present amino acid sequence represents an assassin bug calcium channel blocking peptide of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This invention describes novel conotoxin peptides from the cone snail, genus Conus which have analgesic activity and can act as a voltage-gated ion channel modulator or a ligand-gated ion channel modulator. The conotoxin peptide is useful as a pain-relieving agent for alleviating pain in an individual who is either exhibiting pain or is about to be subjected to a pain-causing event. The conotoxin peptide is also useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New cone snail conotoxin peptides, useful as a pain reliever for alleviating pain in an individual suffering from pain or who is about to be subjected to a pain-causing event, or for treating voltage-gated ion
                                                                                                                                                              A new peptide derived from venomous saliva of assassin bug, has calcium channel blocking activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conotoxin; cone snail; analgesic; voltage-gated ion channel modulator; ligand-gated ion channel modulator; pain-relief.
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Jones RM, Schoenfeld
                                                                                                                                                                                                                                                                                                                                                                                        Type: P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sp conotoxin-associated peptide SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                       GADEDCLPRG SKCLGENKQC CEKTTCMFYA NRCVGI
                                                                                                                                                                                                                                                                                                                                                                                        February 20, 2007 16:53
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; Page 109; 305pp; English.
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                                                                                                                                                                                                                           Claim 9; Page 2; 26pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABG99363 standard; peptide; 36
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-FEB-2001; 2001US-0267408P
                                                           01-SEP-2000; 2000JP-00266187
                                                                                       01-SEP-2000; 2000JP-00266187
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
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                                                                                                                                                  WPI; 2002-421068/45
                                                                                                                    (SUNR ) SUNTORY LTD
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                                                                                                                                                                                                                                                                                                                                                                                          Length: 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conus ammiralis.
                                                                                                                                                                                                                                                                                                                                                              Sequence 36 AA;
JP2002080499-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200264740-A2
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                             19-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Grilley
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This invention describes novel conotoxin peptides from the cone snail, genus Conus which have analgesic activity and can act as a voltage-gated in channel modulator or a ligand-gated ion channel modulator. The conotoxin peptide is useful as a pain-relieving agent for alleviating pain in an individual who is either exhibiting pain or is about to be subjected to a pain-causing event. The conotoxin peptide is also useful con treating or preventing disorders associated with voltage-gated ion channel disorders. Ilgand-gated ion channel disorders or receptor disorders. In radiolabeled conotoxin peptide is also useful for characterising a new site on these receptors or channels, and for screening and identifying novel small molecules that interact with the above mentioned channels or receptors, which are monoamine transporters. In the disclosure of the invention
for treating or preventing disorders associated with voltage-gated ion channel disorders, ligand-gated ion channel disorders or receptor disorders. The radiolabeled conotoxin peptide is also useful for characterising a new site on these receptors or channels, and for screening and identifying novel small molecules that interact with the above-mentioned channels or receptors, which are monoamine transporters. ABG99360-ABG99853 represent the conotoxin protein and peptides described in the disclosure of the invention
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New cone snail conotoxin peptides, useful as a pain reliever for alleviating pain in an individual suffering from pain or who is about to be subjected to a pain-causing event, or for treating voltage-gated ion
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conotoxin; cone snail; analgesic; voltage-gated ion channel modulator; ligand-gated ion channel modulator; pain-relief.
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                                                                                                                                                                                                                   Check: 613
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     M, Garrett JE, Cruz
Jones RM, Schoenfeld
                                                                                                                                                                                                                   February 20, 2007 16:53 Type: P
                                                                                                                                                                                                                                                                                                                                                                                                                         Conus sp conotoxin-associated peptide SEQ ID 233
                                                                                                                                                                                                                                                         XRXGSCTSXL ATCTQDQQCC TDVCXKRDXC ALXDDR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; Page 196; 305pp; English
                                                                                                                                                                                                                                                                                          !!AA_SEQUENCE 1.0
ID ABG99520 standard; peptide; 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11-FEB-2002; 2002WO-US003887.
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(UTAH ) UNIV UTAH RES FOUND.
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                                                                                                                                                                                Sequence 36 AA;
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                                                                                                                                                                                                                     Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conus textile.
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Grilley M,
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DCXSXLGSCI AXSQCCSXVC DXXCRLXR

WO200264740-A2

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This invention describes novel conotoxin peptides from the cone snail, genus Conus which have analgesic activity and can act as a voltage-gated ion channel modulator or a ligand-gated ion channel modulator. The conotoxin peptide is useful as a pain-relieving agent for alleviating pain in an individual who is either exhibiting pain or is about to be subjected to a pain-causing event. The conotoxin peptide is also useful for treating or preventing disorders associated with voltage-gated ion channel disorders. Itgand-gated ion channel disorders or receptor disorders. The radiolabeled conotoxin peptide is also useful for characterising a new site on these receptors or channels, and for screening and identifying novel small molecules that interact with the above-mentioned channels or receptors, which are monoanne transporters. ABG99360-ABG99883 represent the conotoxin protein and peptides described in the disclosure of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New cone snail conotoxin peptides, useful as a pain reliever for alleviating pain in an individual suffering from pain or who is about to be subjected to a pain-causing event, or for treating voltage-gated ion channel disorders.
                                                                                                                                                                                                Conotoxin; cone snail; analgesic; voltage-gated ion channel modulator; ligand-gated ion channel modulator; pain-relief.
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Shetty R, Jones RM, Schoenfeld RM;
                                                                                                                                                       Conus sp conotoxin-associated protein SEQ ID 232.
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!!AA_SEQUENCE 1.0
ID ABG99519 standard; protein; 31 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                             09-FEB-2001; 2001US-0267408P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (COGN-) COGNETIX INC.
(UTAH ) UNIV UTAH RES FOUND.
                                                                                                              17-JAN-2003 (first entry)
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                                                                    ABG99519
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Conotoxin, cone snail, analgesic, voltage-gated ion channel modulator; ligand-gated ion channel modulator; pain-relief. ₹; Olivera BM, Mcintosh JM, Watkins M, Garrett JE, Cruz Grilley M, Walker CS, Shetty R, Jones RM, Schoenfeld Conus sp conotoxin-associated peptide SEQ ID 466. 11-FEB-2002; 2002WO-US003887 09-FEB-2001; 2001US-0267408P. (COGN-) COGNETIX INC. (UTAH) UNIV UTAH RES FOUND. WPI; 2002-706921/76 Conus gloriamaris. WO200264740-A2. 22-AUG-2002. Conotoxin;

Conus sp conotoxin-associated peptide SEQ ID 459.

Conus ammiralis

17-JAN-2003 (first entry)

ABG99674;

!!AA_SEQUENCE 1.0 ID ABG99674 standard; peptide; 36 AA.

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This invention describes novel conotoxin peptides from the cone snail, genus Conus which have analgesic activity and can act as a voltage-gated ion channel modulator or a ligand-gated ion channel modulator. The conotoxin peptide is useful as a pain-relieving agent for alleviating pain in an individual who is either exhibiting pain or is about to be subjected to a pain-causing event. The conotoxin peptide is also useful for channel disorders, ligand-gated ion channel disorders or receptor disorders. The radiolabeled conotoxin peptide is also useful for characterising a new site on these receptors or channels, and for screening and identifying novel small molecules that interact with the aborders—mentioned channels or receptors, which are monoamine transporters.
                                                                                                                                                                                                                                                                                                                      New cone snail conotoxin peptides, useful as a pain reliever for alleviating pain in an individual suffering from pain or who is about to be subjected to a pain-causing event, or for treating voltage-gated ion
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                                                                                                                                                                                                          M, Garrett JE, Cruz LJ;
Jones RM, Schoenfeld RM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WREGSCISWL ATCTQDQQCC TDVCYKRDYC ALWDDR
                                                                                                                                                                                                        Watkins M,
                                                                                                                                                                                                                              Shetty R,
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ID ABG99681 standard; peptide; 32 AA.
                                           11-FEB-2002; 2002WO-US003887.
                                                                                       09-FEB-2001; 2001US-0267408P
                                                                                                                                   (COGN-) COGNETIX INC. (UTAH ) UNIV UTAH RES FOUND.
                                                                                                                                                                                                        Olivera BM, Mcintosh JM,
Grilley M, Walker CS, Sh
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                                                                                                                                                                                                                                                                                                                                                                                                  channel disorders.
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22-AUG-2002.
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This invention describes novel conotoxin peptides from the cone snail, genus Conus which have analgesic activity and can act as a voltage-gated ion channel modulator or a ligand-gated ion channel modulator. The conotoxin peptide is useful as a pain-relieving agent for alleviating pain in an individual who is either exhibiting pain or is about to be subjected to a pain-causing event. The conotoxin peptide is also useful for treating or preventing disorders associated with voltage-gated ion channel disorders. Ingand-gated ion channel disorders or receptor disorders. The radiolabeled conotoxin peptide is also useful for characterising a new site on these receptors or channels, and for characterising and identifying novel small molecules that interact with the New cone snail conotoxin peptides, useful as a pain reliever for alleviating pain in an individual suffering from pain or who is about to be subjected to a pain-causing event, or for treating voltage-gated ion above-mentioned channels or receptors, which are monoamine transporters. ABG99360-ABG99853 represent the conotoxin protein and peptides described the disclosure of the invention Claim 1; Page 275; 305pp; English. channel disorders Sequence 32 AA;

Type: P Check: 9467 February 20, 2007 16:53 ABG99681 Length: 32

ECRAWYAPCS PGAQCCSLLM CSKATSRCIL

Conus sp conotoxin-associated peptide SEQ ID 464. !!AA_SEQUENCE 1.0 ID ABG99679 standard; peptide; 27 AA (first entry) 17-JAN-2003 ABG99679

Conotoxin; cone snail; analgesic; voltage-gated ion channel modulator; ligand-gated ion channel modulator; pain-relief.

Conus ammiralis

WO200264740-A2.

22-AUG-2002

11-FEB-2002; 2002WO-US003887.

09-FEB-2001; 2001US-0267408P.

(COGN-)

COGNETIX INC. UNIV UTAH RES FOUND. (UTAH)

Watkins M, Garrett JE, Cruz itty R, Jones RM, Schoenfeld Shetty R, Mcintosh JM, Walker CS, Olivera BM, Grilley M,

WPI; 2002-706921/76.

New cone snail conotoxin peptides, useful as a pain reliever for alleviating pain in an individual suffering from pain or who is about to be subjected to a pain-causing event, or for treating voltage-gated ion channel disorders

Claim 1; Page 274; 305pp; English.

This invention describes novel conotoxin peptides from the cone snail, genus Conus which have analgesic activity and can act as a voltage-gated ion channel modulator or a ligand-gated ion channel modulator. The conotoxin peptide is useful as a pain-relieving agent for alleviating pain in an individual who is either exhibiting pain or is about to be subjected to a pain-causing event. The conotoxin peptide is also useful for treating or preventing disorders associated with voltage-gated ion

channel disorders, ligand-gated ion channel disorders or receptor disorders. The radiolabeled conotoxin peptide is also useful for characterising a new site on these receptors or channels, and for screening and identifying novel small molecules that interact with the above-mentioned channels or receptors, which are monoamine transporters. ABG99360-ABG999853 represent the conotoxin protein and peptides described in the disclosure of the invention 8X333333XX

Sequence 27 AA;

P Check: 8960 Type: February 20, 2007 16:53 ABG99679 Length: 27

CSSWAKYCEV DSECCSEQCV RSYCAMW

!!AA_SEQUENCE 1.0 ID ABG99678 standard; peptide; 26

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ABG99678;

(first entry) 17-JAN-2003 Conus sp conotoxin-associated peptide SEQ ID 463

Conotoxin; cone snail; analgesic; voltage-gated ion channel modulator; ligand-gated ion channel modulator; pain-relief.

Conus ammiralis.

WO200264740-A2.

22-AUG-2002.

11-FEB-2002; 2002WO-US003887.

09-FEB-2001; 2001US-0267408P.

(COGN-) COGNETIX INC. (UTAH) UNIV UTAH RES FOUND

Z. Garrett JE, Cruz 4, Watkins M, Garret Shetty R, Jones RM, Mcintosh JM, Walker CS, S Olivera BM, Grilley M,

WPI; 2002-706921/76.

ç New cone snail conotoxin peptides, useful as a pain reliever for alleviating pain in an individual suffering from pain or who is about to be subjected to a pain-causing event, or for treating voltage-gated ion channel disorders

Claim 1; Page 274; 305pp; English.

genus Conus which have an algest activity and can act as a voltage-gated ion channel modulator or a ligand-gated ion channel modulator. The conotoxin peptide is useful as a pain-reliaving agent for alleviating pain in an individual who is either exhibiting pain or is about to be subjected to a pain-causing event. The conotoxin peptide is also useful for treating or preventing disorders associated with voltage-gated ion channel disorders, ligand-gated ion channel disorders or receptor disorders. The radiolabeled conotoxin peptide is also useful for characterising and identifying novel small molecules that interact with the above-mentioned channels or receptors, which are monoamine transporters. ABG99360-ABG99853 represent the conotoxin protein and peptides described This invention describes novel conotoxin peptides from the cone snail the disclosure of the invention

Sequence 26 AA;

Type: P Check: 6025 February 20, 2007 16:53 ABG99678 Length: 26

LCPDYTEPCS HAHECCSWNC HNGHCT

11AA SEQUENCE 1.0

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WPI; 2002-706921/76.
                                                                                                                                 Length: 39
                           Conus ammiralis.
                                                                                                                                                                        Conus ammiralis.
                               WO200264740-A2.
                                                                                                                            Sequence 39 AA;
                                                                                                                                                                            WO200264740-A2.
         17-JAN-2003
                                                          BM,
                                    22-AUG-2002
                                                                                                                                                                Conotoxin;
    ABG99676;
                                                                                                                                                 ABG99673;
                                                          Olivera
                                                            Grilley
                                                                                                                                 ABG99676
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GMWGDCKDGL TTCFAPSECC SEDCEGSCTM W Shetty R, Claim 1; Page 273; 305pp; English. Ä. standard; peptide; 28 11-FEB-2002; 2002WO-US003887. 09-FEB-2001; 2001US-0267408P. 11-FEB-2002; 2002WO-US003887. 09-FEB-2001; 2001US-0267408P. (COGN-) COGNETIX INC. (UTAH) UNIV UTAH RES FOUND. COGNETIX INC. UNIV UTAH RES FOUND. (first entry) Mcintosh JM, Walker CS, Sl Mcintosh JM, Walker CS, WPI; 2002-706921/76. WPI; 2002-706921/76 channel disorders. ABG99673 Length: 31 Sequence 31 AA; WO200264740-A2 Conus textile. BM, 17-JAN-2003 22-AUG-2002. 22-AUG-2002 Olivera BM, Grilley M, ABG99689; !!AA_SEQUENCE ID ABG99689 Olivera (UTAH) Grilley (COGN-) This invention describes novel conotoxin peptides from the cone snail, genus Conus which have analgesic activity and can act as a voltage-gated ion channel modulator or a ligand-gated ion channel modulator. The conotoxin peptide is useful as a pain-relieving agent for alleviating pain in an individual who is either exhibiting pain or is about to be subjected to a pain-causing event. The conotoxin peptide is also useful for treating or preventing disorders associated with voltage-gated ion channel disorders, ligand-gated ion channel disorders or receptor disorders. The radiolabeled conotoxin peptide is also useful for acraeterising a new site on these receptors or channels, and for screening and identifying novel small molecules that interact with the above-mentioned channels or receptors, which are monoamne transporters. New cone snail conotoxin peptides, useful as a pain reliever for alleviating pain in an individual suffering from pain or who is about to be subjected to a pain-causing event, or for treating voltage-gated ion channel disorders. Conotoxin; cone snail; analgesic; voltage-gated ion channel modulator; ligand-gated ion channel modulator; pain-relief. Conotoxin; cone snail; analgesic; voltage-gated ion channel modulator; ligand-gated ion channel modulator; pain-relief. February 20, 2007 16:53 Type: P Check: 8797 Ω̈́,; Schoenfeld M, Garrett JE, Jones RM, Schoe Conus sp conotoxin-associated peptide SEQ ID 461, Conus sp conotoxin-associated peptide SEQ ID 458. WWRWGGCMAW FGKCSKDSEC CSNSCDITRC ELMRFPPDW Watkins the disclosure of the invention Ź Shetty R, Claim 1; Page 274; 305pp; English. !!AA_SEQUENCE 1.0 ID ABG99673 standard, peptide, 31 AA. ABG99676 standard; peptide; 39 11-FEB-2002; 2002WO-US003887. 09-FEB-2001; 2001US-0267408P. (COGN-) COGNETIX INC. (UTAH) UNIV UTAH RES FOUND. (first entry) 17-JAN-2003 (first entry) Mcintosh JM, Walker CS, S

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Watkins M, Garrett JE, Cruz
etty R, Jones RM, Schoenfeld
                 Shetty R,
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New cone snail conotoxin peptides, useful as a pain reliever for alleviating pain in an individual suffering from pain or who is about to be subjected to a pain-causing event, or for treating voltage-gated ion

genus Conus which have analgesic activity and can act as a voltage-gated ion channel modulator or a ligand-gated ion channel modulator. The conotoxin peptide is useful as a pain-reliaving agent for alleviating pain in an individual who is either exhibiting pain or is about to be subjected to a pain-causing event. The conotoxin peptide is also useful for treating or preventing disorders associated with voltage-gated ion channel disorders, ligand-gated ion channel disorders or receptor disorders. The radiolabeled conotoxin peptide is also useful for characterising an new site on these receptors or channels, and for screening and identifying novel small molecules that interact with the above-mentioned channels or receptors, which are monoamine transporters. ABG99360-ABG99853 represent the conotoxin protein and peptides described in the disclosure of the invention This invention describes novel conotoxin peptides from the cone snail

Check: 6848 Type: P February 20, 2007 16:53

Conus sp conotoxin-associated peptide SEQ ID 474.

Conotoxin; cone snail; analgesic; voltage-gated ion channel modulator; ligand-gated ion channel modulator; pain-relief.

Ε̈́, JE, Cruz Schoenfeld Watkins M, Garrett JE, letty R, Jones RM, Scho New cone snail conotoxin peptides, useful as a pain reliever for

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This invention describes novel conotoxin peptides from the cone snail, genus Conus which have analgesic activity and can act as a voltage-gated ion channel modulator. The conotoxin peptide is useful as a pain-relieving agent for alleviating pain in an individual who is either exhibiting pain or is about to be subjected to a pain-causing event. The conotoxin peptide is also useful for treating or preventing disorders associated with voltage-gated ion channel disorders, ligand-gated ion channel disorders or receptor disorders. The radiolabeled conotoxin peptide is also useful for disorders. The radiolabeled conotoxin peptide is also useful for characterising a new site on these receptors or channels, and for screening and identifying novel small molecules that interact with the above-mentioned channels or receptors, which are monoamine transporters.
alleviating pain in an individual suffering from pain or who is about to be subjected to a pain-causing event, or for treating voltage-gated ion channel disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant; neuroprotective; cerebroprotective; cardiovascular; antiinflammatory; antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.
                                                                                                                                                                                                                                                                                                                                                                                                                                 February 20, 2007 16:53 Type: P Check: 1490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       is Glu or gamma-carboxy Glu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'label= OTHER
'note= "OTHER is Pro or Hydroxy Pro"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER is Trp or Bromo Trp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Omega-conopeptide Bu6.2 generic toxin sequence.
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                                                                                                                                                                                                                                                                                                                                                            the disclosure of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        !!AA_SEQUENCE 1.0
ID ABB96715 standard; peptide; 31 AA.
                                                                              Claim 1; Page 277; 305pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'label= OTHER
'note= "OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'note= "OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            label= OTHER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                 ABG99689 Length: 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference
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                                                                                                                                                                                                                                                                                                                                                                                                Sequence 28 AA;
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The invention relates to isolated omega-conopeptides, mucleic acid
sequences encoding them, and propeptide sequences. The activity of the
sequences encoding them, and propeptide sequences. The activity of the
peptides of the invention may be described as, analgesic, anticonvulsant,
considered to anticonvulsant, antimigration, neuroprotective, cardiovascular,
antinflammatory, antimigration, neurologic. Peptides of the invention act
considering the activity of voltage gated ion channels. They may be
cused for treating or preventing disorders associated with voltage gated
ion channels such as neurological disorders, e.g. seizure (associated
concain, ischaemia, stroke, cerebrovascular accident, brain or spinal
concat trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic
chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic
concats; pain e.g. migraine; inflammation or cardiovascular disorders.
CT hey may also be used for treating psychiatric disorders e.g. psychosis,
canxiety or schizophrenia. The analgesic agents of the invention show
diminished side effects and toxicity, and are non-addictive. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant; neuroprotective; cerebroprotective; cardiovascular; antiinflammatory; antiinflammatory; antiinflammatory; antiolygianie; antidiabetic; tranquiliser; vulnerary; antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilaps; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke, cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder;
                                                                                                                                                                                                                                                                                     New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurologic or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Type: P Check: 9600
                                                                                                                                                                                         Shon K;
                                                                                                                                                                                         Garrett JE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             February 20, 2007 16:53
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Omega-conopeptide Ra6.2 toxin sequence.

    Watkins M,
Cartier GE;

                                                                                                                                                                                                                                                                                                                                                                    Example 2; Page 30; 195pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    psychosis; anxiety; schizophrenia.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000US-0219616P.
2001US-0265888P.
                                       23-JUL-2001; 2001WO-US023041.
                                                                                                                                 (UTAH ) UNIV UTAH RES FOUND.
(COGN-) COGNETIX INC.
                                                                                                                                                                                                                                                                                                                              cardiovascular disorders.
                                                                                                                                                                                           Mcintosh JM,
Jones RM, C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         generic toxin sequences
                                                                                                                                                                                                                                                   WPI; 2002-257318/30.
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                                                                           21-JUL-2000;
05-FEB-2001;
                                                                                                                                                                                           Olivera BM,
Jacobsen R,
31-JAN-2002
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Misc-difference

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The invention relates to isolated omega-conopeptides, nucleic acid
sequences encoding them, and propeptide sequences. The activity of the
peptides of the invention may be described as, analgesic, anticonvulsant,
vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular,
antinflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary,
antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act
by modulating the activity of voltage gated in channels. They may be
used for treating or preventing disorders associated with voltage gated
ion channels such as neurological disorders, e.g. seizure (associated
with epilepsy), neurotoxic injury associated with conditions of hypoxia,
anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal
chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic
cevents; pain e.g. migraine; inflammation or cardiovascular disorders.
They may also be used for treating psychiatric disorders e.g. psychosis,
anxiety or schizophrenia. The analgesic agents of the invention show
diminished side effects and toxicity, and are non-addictive. The
control of the control of the invention show
control of the control of th
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                                                                                                                                                                                                                                                                                                                                                           New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurologic or cardiovascular disorders.
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/note= "OTHER is Pro or Hydroxy Pro"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note= "OTHER is Pro or Hydroxy Pro"
                                                                                                                                                                                                Garrett JE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dmega-conopeptide Vi6.1 generic toxin sequence.
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    Watkins M,
Cartier GE;

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CNARNSGCSQ HPQCCSGSCN KTAGVCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABB96798 standard; peptide; 31 AA
                              05-FEB-2001; 2001US-026588P.
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21-JUL-2000; 2000US-0219616P.
                                                                                            (UTAH ) UNIV UTAH RES FOUND
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                                                                                                                                                                                                                           Jones RM,
                                                                                                                                                                                            Mcintosh
                                                                                                                               COGNETIX INC.
                                                                                                                                                                                                                                                                                         WPI; 2002-257318/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABB96883 Length: 27
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Misc-difference
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                                                                                                                                                                                                                           Jacobsen R,
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                                                                                                                               (COGN-)
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The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular, antipiffalmmatory, antimigraine, antidiabetic, tranquiliser, vulnerary, antipiffalmmatory, antimigraine, antidiabetic, tranquiliser, vulnerary, conditating the activity of voltage gated ion channels. They may be used for treating or preventing disorders, e.g. seizure (associated ion channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The cardiocation on the cords ABB96698-ABB96806 represent omega-conopeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Omega-conopeptide, analgesic, anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular, antiinflammatory; antimigraine, antidabetic; tranquiliser, vulnerary, antipsychotic; anxiolytic; neuroleptic, voltage gated ion channel, seizure; epilepsy, neurological disorder; neurotoxic injury; hypoxia, anoxia; ischaemia; stroke, cerebrovascular accident; brain trauma; spinal chord trauma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurologic or cardiovascular disorders.
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                                                                                                                                                                                                                                                                                                                                                                                                                                    Shon K;
                  /label= OTHER
/note= "OTHER is Glu or gamma-carboxy Glu"
                                                                         /label= OTHER
/note= "OTHER is Glu or gamma-carboxy Glu"
                                                                                                                                                                                                                                                                                                                                                                                                                                    Garrett JE,
                                                                                                                                 /label= OTHER /note= "OTHER is Trp or Bromo Trp"
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                                                                                                                                                                                                                                                                                                                                                                                                                                  4, Watkins M,
Cartier GE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 2; Page 67; 195pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABB96884 standard; peptide; 27 AA.
                                                                                                                                                                                                                                                                        23-JUL-2001; 2001WO-US023041.
                                                                                                                                                                                                                                                                                                               21-JUL-2000; 2000US-0219616P.
05-FEB-2001; 2001US-0265888P.
                                                                                                                                                                                                                                                                                                                                                                        (UTAH ) UNIV UTAH RES FOUND.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Mcintosh JM,
Jones RM, Ca
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 generic toxin sequences
                                                                                                                                                                                                                                                                                                                                                                                             COGNETIX INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-257318/30.
                                                       Misc-difference 30
                                                                                                                Misc-difference 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 31 AA;
                                                                                                                                                                                            WO200207675-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                    Olivera BM,
Jacobsen R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       !! AA SEQUENCE 1.0
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                                                                                                                                                                                                                                                                                                                                                                                             (COGN-)
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Conus rattus.

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The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular, antinifilammatory, antimigraine, antidiabetic, tranquiliser, vulnerary, antipaychotic, anxiolytic and neuroleptic. Peptides of the invention act by modulating the activity of voltage gated ion channels. They may be used for treating or preventing disorders associated with voltage gated ion channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal cevents; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in records ABB96807-ABB96905 represent omega-conopeptide
drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
migraine; inflammation; cardiovascular disorder; psychiatric disorder;
psychosis; anxiety; schizophrenia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurologic or
                                                                                                                                                                                                                                                                                                                                                                                       Shon
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 Watkins M,
Cartier GE;

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                                                                                                                                                                                                                   23-JUL-2001; 2001WO-US023041.
                                                                                                                                                                                                                                                             2000US-0219616P
2001US-0265888P
                                                                                                                                                                                                                                                                                                                          (UTAH ) UNIV UTAH RES FOUND.
(COGN-) COGNETIX INC.
                                                                                                                                                                                                                                                                                                                                                                                       Mcintosh JM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cardiovascular disorders.
                                                                                                                                                                                                                                                                                                                                                                                                             Jones RM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2002-257318/30.
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                                                                                                                                  WO200207675-A2
                                                                                         Conus rattus.
                                                                                                                                                                                                                                                             21-JUL-2000;
                                                                                                                                                                                                                                                                                05-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                       Olivera BM,
                                                                                                                                                                            31-JAN-2002
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ABB96884 Length: 27 February 20, 2007 16:53 Type: P Check: 8653

CNARNSGCSQ HPQCCSGSCN KTLGVCL

ABB96780;

!!AA_SEQUENCE 1.0 ID ABB96780 standard; peptide; 27 AA.

Omega-conopeptide Ra6.3 generic toxin sequence.

12-JUL-2002 (first entry)

neuroprotective; cerebroprotective; cardiovascular; antilnilammatory; antiningraine; antidiabetic; tranquiliser; vulnerary; antipsychotic; antidiabetic; tranquiliser; vulnerary; antipsychotic; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia. Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;

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The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular, antinflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary, antinflammatory antimigraine, antidiabetic, tranquiliser, vulnerary, antinflammatory activity of voltage gated ion channels. They may be used for treating or preventing disorders associated with voltage gated ion channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal context is also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. Inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in records ABB96698-ABB96006 represent omega-conopeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant; neuroprotective; carebroprotective; cardiovascular; antiinflammatory; antimigataine; antidiabetic; tranquiliser; vulnerary; antimythotic; anxiolytic; voltage gated ion channel; seizure; epileps; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; sulfocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurologic or
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                                                                                                 /note= "OTHER is Pro or Hydroxy Pro"
                                                                                                                                                                                                                                                                                                                                                                                            Garrett JE,
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    Watkins M,
Cartier GE;

                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 2; Page 59; 195pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CNARNSGCSQ HXQCCSGSCN KTLGVCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /label= OTHER
                                                                                                                                                                                                                                                                     21-JUL-2000; 2000US-0219616P.
05-FEB-2001; 2001US-026588P.
                                                                                                                                                                                                                            23-JUL-2001; 2001WO-US023041.
                                                                                                                                                                                                                                                                                                                                  (UTAH ) UNIV UTAH RES FOUND
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                                                                                                                                                                                                                                                                                                                                                                                            Olivera BM, Mcintosh JM,
Jacobsen R, Jones RM, Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cardiovascular disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       generic toxin sequences
                                                                                                                                                                                                                                                                                                                                                       (COGN-) COGNETIX INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2002-257318/30.
                                                        Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 27 AA;
                                                                                                                                            WO200207675-A2
                                                                                                                                                                                                                                                                 21-JUL-2000;
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                                                                                                                                                                                 31-JAN-2002.
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                                         Kev
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Omega-conopeptide Bu6.2 toxin sequence.
                                                                                    ABB96820 standard; peptide; 31 AA
                                                                                   ! IAA SEQUENCE 1.0
                         Jacobsen R,
                                                                                       ABB96820;
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The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular, antiinflammatory, antimigather, cardidate, tranquiliser, vulnerary, antipysychotic, anxiolytic and neuroleptic. Peptides of the invention act by modulating the activity of voltage gated inc channels. They may be used for treating or preventing disorders associated with voltage gated in channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in records ABB96807-ABB96905 represent omega-conopeptide omega-conopeptides useful for treating disorders associated with age gated ion channels e.g. pain, inflammation, neurologic or Shon K; Garrett JE, Watkins M, Cartier GE; Claim 1(a); Page 72; 195pp; English. 21-JUL-2000; 2000US-0219616P. 05-FEB-2001; 2001US-0265888P. 23-JUL-2001; 2001WO-US023041. (UTAH) UNIV UTAH RES FOUND. Olivera BM, Mcintosh JM, cardiovascular disorders. Jones RM, (COGN-) COGNETIX INC. WPI; 2002-257318/30. WO200207675-A2. toxin sequences Sequence 27 AA; Conus rattus. 31-JAN-2002,

ABB96882 Length: 27 February 20, 2007 16:53 Type: P Check: 8346

CNARNDGCSQ HSQCCSGSCN KTAGVCL

12-JUL-2002 (first entry)

Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant; neuroprotective; cerebroprotective; cardiovascular; antinflammatory; antimplataine; antidiabetic; tranquiliser; vulnerary; antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; sulfocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.

Conus bullatus

WO200207675-A2

31-JAN-2002.

23-JUL-2001; 2001WO-US023041.

21-JUL-2000;

21-JUL-2000; 2000US-0219616P. 05-FEB-2001; 2001US-0265888P.

(UTAH) UNIV UTAH RES FOUND

(COGN-) COGNETIX INC

Garrett JE, Mcintosh JM, Watkins M, Jones RM, Cartier GE; Olivera BM, Jacobsen R,

WPI; 2002-257318/30.

New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurologic or cardiovascular disorders.

Claim 1(a); Page 71; 195pp; English.

The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular, antinifilammatory, antimigraine, antidiabetic, tranquiliser, vulnerary, antipisychotic, anxiolytic and neuroleptic. Peptides of the invention act by modulating the activity of voltage gated ion channels. They may be used for treating or preventing disorders, e.g. seizure (associated vith epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in records ABB96807-ABB96905 represent omega-conopeptide

Sequence 31 AA;

Type: P Check: 8422 ABB96820 Length: 31 February 20, 2007 16:53

CITPGTRCKV PSQCCRGPCK NGRCTPSPSE W

!!AA_SEQUENCE 1.0 ID ABB96899 standard; peptide; 31 AA.

ABB96899;

(first entry) 12-JUL-2002 Omega-conopeptide Vi6.1 toxin sequence.

Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant; neuroprotective; cerebroprotective; cardiovascular; antiinflammatory; antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; sulfocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.

Conus viola

WO200207675-A2

31-JAN-2002.

23-JUL-2001; 2001WO-US023041.

23-JUL-2001; 2001WO-US023041.

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The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vasotropic, cardiant, neuroprotective, crebroprotective, cardiovascular, antinflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary, antinflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary, andulating the activity of voltage gated ion channels. They may be used for treating or preventing disorders associated with voltage gated ion channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal anoxia, ischaemia, suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in records ABB96807-ABB96905 represent omega-conopeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               neuroprotective; cerebroprotective; cardiovascular; antilnflammatory; antingraine; antidiabetic; tranquiliser; vulnerary; antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychosis; anxiety; schizophrenia.
                                                                                                                                                                                     New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurologic or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                February 20, 2007 16:53 Type: P Check: 7783
                                                                                                            Shon K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label= OTHER
/note= "OTHER is Pro or Hydroxy Pro"
                                                                                                            Garrett JE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Omega-conopeptide Ra6.2 generic toxin sequence.
                                                                                                            Watkins M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITLGTRCKV PSQCCRSSCK NGRCAPSPEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                    Claim 1(a); Page 72; 195pp; English
                                                                                                                            Cartier GE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          !!AA_SEQUENCE 1.0
ID ABB96779 standard; peptide; 27 AA.
                21-JUL-2000; 2000US-0219616P
                                05-FEB-2001; 2001US-0265888P
                                                             (UTAH ) UNIV UTAH RES FOUND.
(COGN-) COGNETIX INC.
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                                                                                                                                                                                                                    cardiovascular disorders.
                                                                                                            Mcintosh JM,
                                                                                                                            Jones RM,
                                                                                                                                                         WPI; 2002-257318/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABB96899 Length: 31
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       toxin sequences
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                                                                                                            Olivera BM,
                                                                                                                            Jacobsen R,
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The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vasotropic, cardiant, neuroprotective, crebroprotective, cardiovascular, antiniflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary, antiniflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary, antiniflammatory, antimigraine, antidiabetic, tranquiliser, vulnerary, and neuroleptic. Peptides of the invention act by modulating the activity of voltage gated ion channels. They may be used for treating or preventing disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal covents; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The cords ABB96698-ABB96006 represent omega-conopeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant; neuroprotective; cerebroprotective; cardiovascular; antiinflammatory; antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic; anxiolytic; neuroleptic; voltage ded ion channel; seizure; epileps; neurological disorder; neurocoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
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                                                                                                                                                                                                                                                                                     New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurologic or cardiovascular disorders.
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                                                                                                                                                              Shon K;
                                                                                                                                                              Garrett JE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Omega-conopeptide Ra6.1 toxin sequence.
                                                                                                                                                              l, Watkins M,
Cartier GE;
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05-FEB-2001; 2001US-0265888P.
21-JUL-2000; 2000US-0219616P.
05-FEB-2001; 2001US-0265888P.
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                                                                                                                                                                                          Jones RM,
                                                                                  (UTAH ) UNIV UTAH RES
                                                                                                                                                                 Mcintosh
                                                                                                              COGNETIX INC
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                                                                                                                                                                                          Jacobsen R,
                                                                                                                                                                 Olivera BM,
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CNARNDGCSQ HSQCCSGSCN KTAGVCL
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                       (UTAH ) UNIV UTAH RES FOUND.
(COGN-) COGNETIX INC.
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N-PSDB; ADL11897.
                                                                                                                                                                                            WPI; 2002-257318/30.
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                                                                                                             Olivera BM,
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                                                                                                                                          Jacobsen
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X S X T X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B
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The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular, antifulammatory, antimigraine, antidiabetic, tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act by modulating the activity of voltage gated ion channels. They may be used for treating or preventing disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic covents; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in records ABB96698-ABB96806 represent omega-conopeptide New omega-conopeptides useful for treating disorders associated wivoltage gated ion channels e.g. pain, inflammation, neurologic or cardiovascular disorders. Shon K; Garrett JE, Watkins M, Cartier GE; Example 2; Page 58; 195pp; English. Mcintosh JM, generic toxin sequences Jones RM,

Type: P Check: 8346 February 20, 2007 16:53

!!AA_SEQUENCE 1.0 ID ADL11898 standard; protein; 33 AA. (first entry) HWTX-I protein sequence

Bacillus thuringiensis; spider toxin gene; biopesticide.

Bacillus thuringiensis.

18-JUL-2001; 2001CN-00114592

The invention relates to peptides (ADS31818-ADS31820 and ADS31833-ADS31834) or their salts which specifically inhibit the activity of mechano-sensitive channels. The peptides are based on the sequence of fragments of the known Grammostola spatulata spider venom peptide GSMTx-4 ADS31811 which blocks cation-selective stretch-activated channels, and with the exception of TVP0013 ADS31818, comprise at least one Cys to Ala substitution. The entire GSMTx-4 sequence is specifically excluded from the scope of the invention. The invention also relates to polymuclectides encoding the mechano-sensitive channel inhibitor peptides, and vectors and host cells comprising such polymuclectides. The peptides of the invention are useful for treating atrial fibrillation and for studying the mechanisms of mechano-sensitive channels. The present sequence invention are useful for treating atrial fibrillation and for studying the mechanisms of mechano-sensitive channels. The present sequence competing 100 and 100 a

Example 1; SEQ ID NO 12; 49pp; Japanese.

February 20, 2007 16:53 Type: P Check: 2431

ADS31829 Length: 33

Sequence 33 AA;

spatulata spider venom peptide GsMTx-4)

PGKNECCPNR VCSDKHKWCK WKL

ACKGVFDACT

New strain of Bacillus thuringiensis, containing a spider toxin gene and a promoter sequence, is used as a biopesticide.

Disclosure; SEQ ID NO 2; 28pp; Chinese

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The present invention relates to a Bacillus thuringiensis strain comprising a spider toxin gene and a strong promoter sequence. The bthuringiensis is used as a biopesticide as it can produce the B.thuringiensis toxin and a spider toxin. The present sequence represents a HWTX-I protein sequence.
                                                                                                                                                                                                                               Selenocosmia huwena spider venom peptide 1QK6_A (Huwenotoxin-I), SEQ:12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel polypeptides such as TVP003, TVP004, TVP005 or their salts, which specifically inhibits activity of mechano-sensitive channel, useful for treating atrial fibrillation.
                                                                                                                                                                                                                                                     Mechano-sensitive channel; cation-selective stretch-activated channel; inhibitor peptide; GSMTx-4; spider venom; atrial fibrillation; antiarrhythmic; 1QKG_A; Huwenotoxin-I.
                                                                                                Check: 2431
                                                                                                ADL11898 Length: 33 February 20, 2007 16:53 Type: P
                                                                                                                      ACKGVFDACT PGKNECCPNR VCSDKHKWCK WKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ë
                                                                                                                                                           Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Furuya
                                                                                                                                            !!AA_SEQUENCE 1.0
ID ADS31829 standard; peptide; 33
                                                                                                                                                                                                                                                                                                                                                                          25-MAR-2004; 2004WO-JP004190.
                                                                                                                                                                                                                                                                                                                                                                                                 26-MAR-2003; 2003JP-00085666.
                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sokabe M,
                                                                                                                                                                                                                                                                                                                                                                                                                         (PHAR-) PHARMADESIGN INC
                                                                                                                                                                                                                                                                                                      Ornithoctonus huwena.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2004-719044/70.
                                                                                                                                                                                                                                                                                                                              WO2004085647-A1.
                                                                         Sequence 33 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Yokotagawa T,
                                                                                                                                                                                                         30-DEC-2004
                                                                                                                                                                                                                                                                                                                                                    07-OCT-2004.
                                                                                                                                                                                 ADS31829;
   88888888
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1 <x{0,6}cx{5,6}cx{4}(E,Q)ccx{3,4}cx{3,6}cx{0,9}> - pattern denethed

A58175 ck: 8971 len: 27 | delta-conotoxin TxVIIA - cone shell (Conus Acces in #

1 We on the case we the cx{0,6}cx{4}(B,Cx{3,4}cx{3,4}cx{3,6}cx{0,9}) + fecese we the cx{0,6}cx{4}(B,Cx{4}(B,Cx{3,4}cx{3,6}cx{3,6}cx{0,9}) + fecese we then the construction of the construction of the construction of the confidence of the confidenc

<X{0,6}CX{5,6}CX{4}(E,0)CCX{3,4}CX{3,6}CX{0,9}>
xCx{6}CX{5}(E)CCX{4}CX{6}CX{4}
ACKGVFDACTPGKNECCPNRVCSDKHKWCKWKL

Databases searched: NBRF, Release 80.0, Released on 31Dec2004, Formatted on 21Jun2005

Total finds: Total length: Total sequences: CPU time:

26,216,763 283,416 52.98

PA SEQUENCE 1.0

PA A SEQUENCE 1.0

PA A SEQUENCE 1.0

N. A SEQUENCE 1.0

N. A SEQUENCE 1.0

N. A SEQUENCE 1.0

N. A SEQUENCE 1.0

C. Species: Conus textile (cloth-of-gold cone)

C. Accession: A58175; S19620

R. Nakamura, T.; Yu, Z.; Fainzilber, M.; Burlingame, A.L.

R. Nakamura, T.; Yu, Z.; Painzilber, M.; Burlingame, A.L.

R. Nakamura, T.; Yu, Z.; Painzilber, M.; Burlingame, A.L.

R. Nakamura, T.; Yu, Z.; Painzilber, M.; Burlingame, A.L.

Protein Sci. 5, 544-530, 1996

A. Title: Mass spectrometric-based revision of the structure of a cysteine-rich peptide toxin with gamma-carboxyglutamic acid, TxVIIA, from the sea snail,

A;Reference number: A58175; MUID:97022130; PMID:8868490 A;Contents: correction A;Accession: A58175

Ajfolecule type: protein
Ajfolecule type: protein: jasson, A.; Spira, M.E.; Zlotkin, E.
Eur. J. Biochem. 202, 589-595, 1991
Ajfitle: Mollusc-specific toxins from the venom of Conus textile neovicarius.
Ajfolecule type: protein

C; Superfamily: omega-conotoxin C; Keywords: amidated carboxyl end; carboxyglutamic acid; neurotoxin; sodium channel inhibitor; venom F:1-15, 8-19,14-24/Disulfide bonds: #status predicted F:9,13/Modified site: gamma-carboxyglutamic acid (Glu) #status experimental F:27/Modified site: amidated carboxyl end (Phe) #status experimental

A58175 Length: 27 February 20, 2007 13:58 Type: P Check: 8971

1 GGYSTYCEV DSECONOCV RSYCTLE

Xaa= Des-Xaa

a58175.pirl

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yer Accession # to match suference to alignment
Wed Feb 21 10:04:12 2007
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A37479 Length: 33 February 20, 2007 13:58 Type: P Check: 2431

1 ACKGVFDACT PGKNECCPNR VCBDKHKWCK WKL

149A_SEQUENCE 1.0

NyA37479 - huwentoxin-1 - Chinese bird spider
C;Species: Selenocosmia huwena (Chinese bird spider)
C;Species: 18-mar-1994 #sequence_revision 07-Oct-1994 #text_change 09-Jul-2004
C;Accession: A37479; JCIO89
R;Liang, S.P.; Zhang, D.Y.; Pan, X.; Chen, Q; Rhou, P.A.
Toxicon 31, 969-978, 1993
A;Title: Properties and aminh acid sequence of huwentoxin-1, a neurotoxin
purified from the venom of the Chinese bird spider Selenocosmia huwena.
A;Reference number: A37479; MUID:94024948; PMID:8212049
A;Molecule type: protein
A;Residues: 1-33 cLIA>
A;Cross-references: UNIPROT:P56676; UNIPARC:UP10000046672
R;Liang, S.P.; Zong, X.; Luo, J.C.; Jing, H.; Gu, X.C.
Acta Sci. Natur. Univ. Pekin. 29, 668-674, 1993
A;Title: Secondary structure study of huwentoxin-1, a neurotoxin from the venom of the spider Selenocosmia huwena.
A;Reference number: JCI089
A;Molecule type: protein
A;Residues: 1-33 cLI2>
A;Cross-references: UNIPARC:UP10000046672
C;Comment: This peptide is the major active protein component of venom in this species. The crude venom was shown to act as a presynaptic neurotoxin.
C;Keywords: presynaptic neurotoxin; venom
F;2-17,9-22,16-29/Disulfide bonds: #status experimental

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2,849,598 09:45.18

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Total sequences:
CPU time:
                                                                                                                                                                                                                                                                                                                                                          ! P56711 conus pennaceus (feathered cone). ga
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ! P58609 isyndus obscurus (assassin bug). tox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ! P58425 heteropoda venatoria (giant crab spi
                                                                    ! P58608 agriosphodrus dohrni (assassin bug)
                                                                                                                                                                ! P24160 conus textile (cloth-of-gold cone).
                                                                                                                                                                                                                                                            ! P58922 conus textile (cloth-of-gold cone).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ! P83591 selenocosmia hainana (chinese bird
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ! P83464 selenocosmia hainana (chinese bird
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <X{0,6}CX{5,6}CX{4}(E,Q)CCX{3,4}CX{3,6}CX{0,9}>
CX{6}CX{4}(E)CCX{3}CX{4}CX{3}
                                                                                                                                                                                                                                                                                      1 <X{0,6}CX{5,6}CX{4}(E,Q)CCX{3,4}CX{3,6}CX{0,9}>
 ! FINDPATTERNS on uniprot: * allowing 0 mismatches
                                                                                                                                                                k: 8971 len: 27
                                                                                                                                                                                                                                                              ck: 6937 len: 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                     IOBL_ISYOB ck: 9883 len: 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TXHA1_SELHA ck: 2511 len: 33
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                                                                    ADO1_AGRDO ck: 7710 len: 35
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TXR3_MACRV ck: 2020 len: 29

! P61232 macrothele raveni (spider). raventox

Databases searched: UNIPROT, Release 7.2, Released on 7Mar2006, Formatted on 7Mar2006

9 925,015,592 Total finds: Total length:

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Apogastropoda; Caenogastropoda; Sorbeoconcha; Hypsogastropoda;

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                                                                                                                                                                                                                           TISSUE=Saliva;
MEDLINE=21316029; PubMed=11423127; DOI=10.1016/S0014-5793(01)02558-3;
Corzo G., Adachi-Akahane S., Nagao T., Kusui Y., Nakajima T.;
"Novel peptides from assassin bugs (Hemiptera: Reduviidae): isolation, chemical and biological characterization.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPRO12325, Ass.bug_toxin.
Pfem; Pr08117; Toxin 30; 1.
PROSITE; PS60010; ASSASSIN BUG_TOXIN; 1.
3D-structure; Calcium channel Inhibitor; Direct protein sequencing; Ionic channel inhibitor; Neurotoxin; Toxin.
                                                                                                                                                                                                                                                                                                                                                                                               "Solution structure of AbO1, a toxin extracted from the saliva of assassin bug, Agriosphodrus dohrni."; Proteins 54:195-205(2004).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Type: P Check: 7710
                                                                                                                                                                                                                                                                                                                                      STRUCTURE BY NMR, AND FUNCTION.
PubMed=14696181, DOL=10.1002/prct.10513;
Bernard C., Corzo G., Adachi-Akahane S., Foures G., Kanemaru K.,
Furukawa Y., Nakajima T., Darbon H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                             -!- FUNCTION: Binds reversibly and blocks P/Q-type voltage-gated calcium channels.
                                                                                                                     Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Paraneoptera; Hemiptera; Euhemiptera; Heteroptera;
Panheteroptera; Cimicomorpha; Reduviidae; Harpactorinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- SUBCELLULAR LOCATION: Secreted protein.
-!- TISSUE SPECIFICITY: Produced by the venomous saliva.
-!- MASS SPECTROMETRY: MW=3781.3; METHOD=MALDI; RANGE=1-35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAX-1992, integrated into UniProtKB/Swiss-Prot.
30-MAY-2000, sequence version 2.
07-FBB-2006, entry version 41.
Conctoxin TxVIIA (FIATA).
Conus textile (Cloth-IATA).
Eukaryota, Metazoa; Mollusca; Gastropoda; Orthogastropoda;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NOTE=Ref.1.
-!- SIMILARITY: Belongs to the assassin bug toxin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3787 MW; 3E83D94C6D614E88 CRC64;
                                            23-JAN-2002, integrated into UniProtKB/Swiss-Prot.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Toxin Adol.
/FTId=PRO_000044889
                 35 AA.
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                                                                                                                                                                                                              PROTEIN SEQUENCE, AND MASS SPECTROMETRY.
                                                                                                     Agriosphodrus dohrni (Assassin bug)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                 PRT;
                                                          23-JAN-2002, sequence version 1. 07-FEB-2006, entry version 30.
               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDB; 1LMR; NMR; A=1-35.
                                                                                                                                                               Agriosphodrus.
NCBI_TaxID=184613;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35 AA;
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!! AA SEQUENCE 1.0
              ADO1_AGRDO
P58608;
                                                                                       Toxin Adol
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                                                                                                                                                                                                                                                            of a cysteine-rich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Furie B., Roepstorff P.; "Structure determination of two conotoxins from Conus textile by a "Structure determination of two combination of matrix-assisted laser desorption/ionization time-of-flight and electrospray ionization mass spectrometry and biochemical
                                                                                                                                                                                                                                                                           peptide toxin with gamma-carboxyglutamic acid, TxVIIA, from the sea snall, Conna textile.";

Protein Sci. 5:524-530 (1996).

Protein Sci. 5:524-530 (1996).

-i- FUNCTION: Potent neurotoxin. May exert its effects at the level
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOI=10.1002/(SICI)1096-9888(200002)35:2<145::AID-JMS922>3.0.CO;2-I;
Kalume D.E., Stenflo J.P., Czerwiec E., Hambe B., Furie B.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                        -!- MASS SPECTROMETRY: MW=3088.9; METHOD=Electrospray; RANGE=1-27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR; A58175; A58175.
Amidation; Direct protein sequencing; Gamma-carboxyglutamic acid;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Check: 8971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Mollusca; Gastropoda; Orthogastropoda;
Apogastropoda; Caenogastropoda; Sorbeoconcha; Hypsogastropoda;
Neogastropoda; Conoidea; Conidae; Conus.
                                                                                STRAIN=Neoricarius; TISSUE=Venom;
MEDLINE=92104183; PubMed=1761058;
Fainzilber M., Gordon D., Hasson A., Spira M.E., Zlopkin E.;
"Mollusc-specific toxins from the venom of Conus textile
                                                                                                                                                                                                       SEQUENCE REVISION TO 1 AND C-TERMINUS, AND MASS SPECTROMETRY MEDLINE=97022130; PubMed=8868490;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J. Mass Spectrom. 35:145-156(2000).
--- SUBCELLULAR LOCATTON: Secreted protein.
--- TISSUB SPECIFICATTY: Expressed by the venom duct.
--- MASS SPECIFORETRY: MW=3672.78; METHOD=MALDI; RANGE=1-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- SIMILARITY: Belongs to the conotoxin O superfamily
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Phenylalanine amide.
D7A49781300FE1E7 CRC64;
                                                                                                                                                                                                                                                                                                                                                  the neuromuscular junction.
SUBCELULIAR LOCATION: Secreted protein.
TISSUE SPECIFICITY: Expressed by the venom duct.
PTM: Contains three disulfide bonds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Type: P
                                                                                                                                                                                                                                          Nakamura T., Yu Z., Fainzilber M., Burlingame A.L.; "Mass spectrometric-based revision of the structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conotoxin TxVIIA.
/FTId=PRO 0000044485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-JUL-2002, integrated into UniProtKB/Swiss-Prot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4-carboxyglutamate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4-carboxyglutamate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31 AA
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              Conoidea; Conidae; Conus
                                                                                                                                                                      Eur. J. Biochem. 202:589-595(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 CEGYSTYCEV DSRCDSDNCV RSYCTLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=20146306; PubMed=10679974;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conus textile (Cloth-of-gold cone)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-JUL-2002, sequence version 1. 07-FEB-2006, entry version 24. Conotoxin Gla(1)-TxVI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3008 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Neurotoxin; Toxin.
                               NCBI_TaxID=6494;
                                                                   PROTEIN SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=6494;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IAA_SEQUENCE 1.0
                                                                                                                                                      neovicarius
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             methods.";
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SEQUENCE
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                          Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Triggers depolarization and firing of action potential bursts in the caudodreal neurons of lymnaea. This effect is due to activation or enhancement of a slow inward cation current that may underly endogenous bursting activity of these neurons.

-: SUBCELIULAR LOCATION: Secreted protein.
-: TISSUE SPECIFICITY: Expressed by the venom duct.
-: PTM: Contains three disultide bonds.
-: PTM: Contains three disullide bonds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct protein sequencing; Gamma-carboxyglutamic acid; Hydroxylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Gamma-conotoxin-PnVIIA, a gamma-carboxyglutamate-containing peptide agonist of neuronal pacemaker cation currents."; Biochemistry 37:1470-1477(1998).
                                                                         Bromination; Direct protein sequencing; Gamma-carboxyglutamic acid;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Check: 385
                                                                                                                                                                                                                                                                                                                February 16, 2007 16:49 Type: P Check: 6937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=98145210; PubMed=9484216; DOI=10.1021/bi971571f;
Fainzilber M., Nakamura T., Lodder J.C., Zlotkin E., Kits K.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota, Metazoa, Mollusca, Gastropoda, Orthogastropoda, Apogastropoda, Caenogastropoda, Sorbeoconcha, Hypsogastropoda, Neogastropoda, Conoidea, Conidae, Conus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -!- SIMILARITY: Belongs to the conotoxin O superfamily.
-!- SIMILARITY: Belongs to the conotoxin O superfamily.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CXG7A_CONPE Length: 32 February 16, 2007 16:49 Type: P
                                                                                                                                                                                                                                       By similarity.
By similarity.
By similarity.
O1E836DAB1D04580 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4-hydroxyproline.
78CCFC5E02FEB59C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gamma-conotoxin PnVIIA. /FTId=PRO_0000044877.
                                                                                                     Conotoxin Gla(1)-TxVI /FTId=PRO_0000044879.
                                                                                                                                                                                                                                                                                                                                                                                                                           30-MAY-2000, integrated into UniProtKB/Swiss-Prot.
                                                                                                                                                   4-carboxyglutamate.
                                                                                                                                                                               4-carboxyglutamate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4-carboxyglutamate.
                                                                                                                                 6' -bromot ryptophan.
                                                                                                                                                                                                              4-carboxyglutamate.
6'-bromotryptophan.
                                                                                                                                                                 4-hydroxyproline.
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                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                       30-MAY-2000, sequence version 1. 07-FEB-2006, entry version 32. Gamma-conotoxin PnVIIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conus pennaceus (Feathered cone)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3621 MW;
                                                                                                                                                                                                                                                                                      3334 MW;
                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                       3
                                                                                      Toxin.
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26
31
                                                                                         Hydroxylation;
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ID CXG7A CONPE
AC P56711;
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DCTSWFGRCT VNSECCSNSC DQTYCELYAF PS

Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License -I- FUNCTION: Binds reversibly and blocks N-type voltage-gated calcium channels (By similarity).
-I- SUBCELLULAR LOCATION: Produced protein.
-I- TISSUE SPECIFICITY: Produced by the venomous saliva. T., Kusui Y., Nakajima T.; (Hemiptera: Reduviidae): isolation, MEDLINE=21316029; PubMed=11423127; DOI=10.1016/S0014-5793(01)02558-3; SEQUENCE REVISION TO 30-32, FUNCTION, SUBUNIT, SUBCELLULAR LOCATION, TISSUE SPECIFICITY, MASS SPECTROMETRY, DISULFIDE BONDS, AMIDATION, IC(50), AND STRUCTURE BY NWR. TISSUE-Venom; Neoptera, Paraneoptera, Hemiptera, Euhemiptera, Heteroptera, Panheteroptera, Cimicomorpha, Reduviidae, Harpactorinae, Isyndus. February 16, 2007 16:49 Type: P Check: 9883 01-JUN-2003, sequence version 1.
07-MAR-2006, entry version 24.
Hainantoxin-1 (Hainantoxin-1) (HnTx-1).
Selenocosmia hainana (Chinese bird spider).
Eukaryota; Metazoa; Arthropoda; Chelicerata; Arachnida; Araneae; Xiao Y.-C., Liang S.-P.; "Purification of Hainantoxin-V, a tetrodocon Purification and characterization of Hainantoxin-V a tetrodocon sensitive sodium channel inhibitor from the venom of the spider Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; -!- MASS SPECTROMETRY: MM=3938.5; METHOD=MALDI; RANGE=1-36; NOTE=Ref.1. -!- SIMILARITY: Belongs to the assassin bug toxin family. PEam, PF08117; Toxin 30; 202-003-004...
PROSITE, PS60010; ASSASSIN-BUG TOXIN; 1.
Calcium channel inhibitor; Direct protein sequencing; Ionic channel inhibitor; Neurotoxin; Toxin.
PEPTIDE 2DB8C392FA876F3E CRC64; PubMed=12727268; DOI=10.1016/S0041-0101(02)00280-5; /FTId=PRO 0000044890. By similarity. By similarity. By similarity. 23-JAN-2002, integrated into UniProtKB/Swiss-Prot. 27-JUN-2003, integrated into UniProtKB/Swiss-Prot GADEDCLPRG SKCLGENKQC CEKTTCMFYA NRCVGI 36 AA. Mygalomorphae; Theraphosidae; Ornithoctonus NCBI_TaxID=209901; Corzo G., Adachi-Akahane S., Nagao T., Kusu: "Novel peptides from assassin bugs (Hemipte: chemical and biological characterization."; FEBS Lett. 499:256-261(2001). 33 AA PROTEIN SEQUENCE, AND MASS SPECTROMETRY. InterPro; IPR012325; Ass_bug_toxin. PRT; PRT; sequence version 1. Isyndus obscurus (Assassin bug) 23-JAN-2002, sequence version 07-FEB-2006, entry version 25. 3945 MW; Toxicon 41:643-650(2003). STANDARD; STANDARD; Selenocosmia hainana. 36 AA; NCBI_TaxID=184615; IOB1_ISYOB Length: 36 PROTEIN SEQUENCE. TISSUE=Saliva; ! AA SEQUENCE 1.0 TISSUE=Venom ! AA_SEQUENCE 1.0 TXHA1_SELHA P83591; IOB1 ISYOB P58609; roxin Iobl DISULFID DISULFID SEQUENCE DISULFID

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                                                                                                                                                                                                                                                                                                                                           -!- FUNCTION: Is a depressant toxin. Binds and blocks insect sodium channels without altering the activation or inactivation kinetics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GO; GO:000576; C:extracellular region; NAS.
GO; GO:0019971; F:sodium channel inhibitor activity; NAS.
GO; GO:0019972; P:defense response; NAS.
GO; GO:0004965; P:pathogenesis; NAS.
INTERPRO; IPR013140; Huwentoxin-1.
INTERPRO; IPR011896; Toxin-12.
IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NOTE-Ref.2.
-!- MISCELLANEOUS: IC(50) is 68 +/- 6 uM on rNal.2/betal channel.
-!- MISCELLANEOUS: IC(50) is 4.3 +/- 0.3 uM on insect sodium channel
                                                                                                                                            "Function and solution structure of hainantoxin-I, a novel insect sodium channel inhibitor from the Chinese bird spider Selenocosmia
PubMed=14675784; DOI=10.1016/S0014-5793(03)01303-6;
Li D.-L., Xiao Y.-C., Hu W.-J., Xie J.-Y., Bosmans F., Tytgat J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Check: 2511
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-!- SIMILARITY: Belongs to the huwentoxin-1 family.
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/FTId=PRO_0000045004.
Leucine amide.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -!- SUBCELLULAR LOCATION: Secreted protein.
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                                                                                                                                                                                                                                                                                              555:616-622(2003)
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          RRYBBY RYBBY RYBBY
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Zhu Q., Liu Z.-H., Liang S.-P.; Finch of hainantoxin-III, a potent neuronal TTX-sensitive sodium channel antagonist from Chinese bird spider Selenocosmia hainana.";
                                                                                                                                                                                                PROTEIN SEQUENCE, FUNCTION, SUBUNIT, SUBCELLULAR LOCATION, TISSUE SPECIFICITY, MASS SPECTROMETRY, DISULFIDE BONDS, AMIDATION, AND STRUCTURE BY NMR.
                                                                 07-MAR-2006, entry version 22.
Hainantoxin-3 (Hainantoxin-III) (HnTx-III).
Selenocosmia hainana (Chinese bird spider).
Eukaryota; Metazoa; Arthropoda; Chelicerata; Arachnida; Araneae;
Mygalomorphae; Theraphosidae; Ornithoctonus.
                              01-NOV-2002, integrated into UniProtKB/Swiss-Prot. 01-NOV-2002, sequence version 1.
                                                                                                                                                                                                                                                                                                                                 Submitted (OCT-2002) to Swiss-Prot
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GO; GO: 0019871; F: sodium channel inhibitor activity; NAS.
GO; GO: 0019871; F: sodium channel inhibitor activity; NAS.
GO; GO: 0009405; P: synaptic transmission; NAS.
InterPro; IPR013140; Huwantoxin-1.
InterPro; IPR011696; Toxin_12.
Fram, PF07740; Toxin_12; 1.
Amidation; Direct protein sequencing; Ionic channel inhibitor;
Neurotoxin; Presynaptic neurotoxin; Sodium channel inhibitor;
Neurotoxin; Presynaptic neurotoxin; Sodium channel inhibitor;
MODINES 33 Leucine amide. -i- TISSUE SPECIFICITY: Expressed by the venom gland. -i- MASS SPECTROMETRY: MW-3607.6; METHOD=Electrospray; RANGE=1-33; Check: 2983 FUNCTION: Lethal neurotoxin. Acts selectively on terodotoxin-sensitive voltage-gated sodium channels. Type: P 3615 MW; 192DB5BCC541E811 CRC64; -!- SIMILARITY: Belongs to the huwentoxin-1 family February 16, 2007 16:50 SUBUNIT: Monomer. SUBCELLULAR LOCATION: Secreted protein. 33 17 22 29 HSSP; P56676; 1QK6. TXHA3_SELHA Length: 33 16 33 AA; 33 9 2 9 MOD RES DISÜLFID SEQUENCE DISULFID DISULFID SO THE THE TENT THE T

1!AA_SEQUENCE 1.0 ID _TXHP1_HETVE œ́,

1 GCKGFGDSCT PGKNECCPNY ACSSKHKWCK VYL

05-DEC-2001, integrated into UniProtKB/Swiss-Prot.
05-DEC-2001, sequence version 1.
07-FEB-2006, entry version 23.
Heteropodatoxin-1 (HPTXL) (Toxin AU3/KJ5).
Heteropoda venatoria (Giant crab spider).
Eukaryota, Metazoa, Arthropoda, Chelicerata, Arachnida, Araneae, PROTEIN SEQUENCE, CHARACTERIZATION, AND MASS SPECTROMETRY 33 AA. PRT; STANDARD; NCBI_TaxID=152925; TISSUE=Venom; P58425

MEDLINE=97211638; PubMed=9058605; Sanguinetti M.C., Johnson J.H., Hammerland L.G., Kelbaugh P.R., Volkmann R.A., Saccomano N.A., Mueller A.L.; Heteropodatoxins: peptides isolated from spider venom that block Kv4.2 potassium channels."; Mol. Pharmacol. 51:491-498(1997).

TISSUE=Venom;
Kelbaugh P.R., Saccomano N.A., Volkmann R.A.;
Kelbaugh P.R., Saccomano N.A., Volkmann R.A.;
Calcium channel blocoking polypeptides from Heteropoda venatoria.";
Patent number USS627184, 66-MAY-1997.
-!- FUNCTION: Inhibitor of voltage-gated potassium channels. Blocks
potassium currents by binding to Kv4.2 potassium channels. Also
blocks calcium channels.
-!- SUBCELLULAR LOCATION: Secreted protein.
-!- TISSUE SPECIFICITY: Expressed by the venom gland.
-!- PTM: Contains three disulfide bonds.
-!- PTM: Contains three disulfide bonds.
-!- MASS SPECIROMETRY: MW=3910.57; METHOD=Electrospray; RANGE=1-33;

PROTEIN SEQUENCE, FUNCTION, DISULFIDE BONDS, AND MASS SPECTROMETRY

MASS SPECTROMETRY: MW=3909.94; METHOD=Electrospray; RANGE=1-33; SIMILARITY: Belongs to the spider potassium channel inhibitory

toxin family.

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           Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROTEIN SEQUENCE, AND MASS SPECTROMETRY.

TISSUE=Venom;

Pubmed=12727259; DOI=10.1016/S0041-0101(02)00361-6;

Zeng X.-Z., Xiao Q.-B., Liang S.-P.;

"Purification and characterization of raventoxin-I and raventoxin-III,

two neurotoxic peptides from the venom of the spider Macrothele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Toxion 41:651-656 (2003).
-!- FUNCTION: This toxin blocks the neuromuscular transmission. This toxin is active only against mammals.
-!- SUBCELLULAR LOCATION: Secreted protein (By similarity).
-!- TISSUB SPECTRICITY: Expressed by the venom gland.
-!- MASS SPECTROMETRY: MW=3287.58; METHOD=MALDI; RANGE=1-29;
                                                                                                                                                                                                                                                                      TXHP1_HETVE Length: 33 February 16, 2007 16:50 Type: P Check: 3006
                                                          InterPro; IPR011696; Toxin_12.
Pfam; PF07740; Toxin_12; 1.
Amidation; Calcium channel inhibitor; Direct protein sequencing; Ionic channel inhibitor; Neurotoxin; Potassium channel inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TXR3_MACRV Length: 29 February 16, 2007 16:50 Type: P Check: 2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Macrothele raveni (Spider).
Eukaryota; Metazoa; Arthropoda; Chelicerata; Arachnida; Araneae;
Mygalomorphae; Hexathelidae; Macrothele.
NCBI_TaxID=269627;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR012628; Toxin 23.
Pfam; PF08093; Toxin 23; 1-
Direct protein sequencing; Ionic channel inhibitor; Neurotoxin;
Sodium channel inhibitor; Toxin.
PEPTIDE
                                                                                                                                        Heteropodatoxin-1.
/FTId=PRO_0000045019.
Tryptophan amide.
By similarity.
By similarity.
By similarity.
CBy similarity.
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2 16 By similarity.
9 21 By similarity.
15 26 By similarity.
29 AA, 3293 MW, 9143A6E21E4D09FE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                    10-MAY-2004, integrated into UniProtKB/Swiss-Prot
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07-FEB-2006, entry version 13.
Raventoxin-3 (Raventoxin III).
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2 17
9 22
16 27
33 AA, 3917 MW;
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ID TXR3 MACRV
AC P61232;
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PEPTIDE
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1 GCKLTFWKCK NKKECCGWNA CALGICMPR

Art Unit: 1644

DETAILED ACTION

- 1. Claims 1-20 are pending.
- 2. Applicant's election of Group I, claims 1-6, in the reply filed on 12/05/2006 is acknowledged.
- Claims 7-20 are withdrawn from further consideration pursuant to 37 CFR
 1.142(b) as being drawn to a nonelected invention.
- 4. Claims 1-6 are currently under examination as they read upon a substantially pure conopeptide having the general formula of SEQ ID NO:1.
- 5. Applicant's IDS filed on 08/26/2003 is acknowledged.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, because the specification while being enabled for the substantially pure conopeptides PnVIIA (SEQ

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ID NO: 6), Tx6.4 (SEQ ID NO: 7), Tx6.9 (SEQ ID NO: 8), Tx6.6 (SEQ ID NO:10), Gm6.7 (SEQ ID NO: 12), Mr6.1 (SEQ ID NO: 13), Mr6.2 (SEQ ID NO:14) and Mr6.3 (SEQ ID NO:15), does not reasonably provide enablement for a substantially pure conopeptide or pharmaceutically acceptable salt thereof, said conopeptide having the general formula I: Xaa₁-Cys-Xaa₂-Cys-Xaa₃-Xaa₄-Cys-Cys-Xaa₅-Cys-Xaa₆-Cys-Xaa₇ (SEQ ID NO:1), wherein Xaa₁ is des-Xaa₁ or a peptide having 1-6 amino acids; Xaa₂ is a peptide having 5-6 amino acids; Xaa₃ is a peptide having 4 amino acids; Xaa₄ is Glu, γ-carboxyglutamic acid (γ - Glu) or Gln; Xaa₅ is a peptide having 3-4 amino acids; Xaa₆ is a peptide having 3-6 amino acids; and Xaa₇ is des-Xaa₇ or a peptide having 2-9 amino acids, with the proviso that when Xaa₁ is des-Xaa₁, then Xaa₅ is not the tripeptide Ser-Asp-Asn of claim 1; wherein Xaa₄ is γ - Glu of claim 2; wherein Xaa₁ is des-Xaa₁ of claim 3; wherein Xaa₁ is a peptide having 1-6 amino acids of claim 4; wherein Xaa₇ is des-Xaa₇ of claim 5 and wherein Xaa₇ is a peptide having 2-9 amino acids.

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

Factors to be considered in determining whether undue experimentation is required to practice the claimed invention are summarized In re Wands (858 F2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988)). The factors most relevant to this rejection are the scope of the claim, the amount of direction or guidance provided, the lack of

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sufficient working examples, the unpredictability in the art and the amount of experimentation required to enable one of skill in the art to practice the claimed invention. The specification disclosure is insufficient to enable one skilled in the art to practice the invention as broadly claimed without an undue amount of experimentation.

The specification discloses substantially pure conopeptides PnVIIA (SEQ ID NO: 6), Tx6.4 (SEQ ID NO: 7), Tx6.9 (SEQ ID NO: 8), J010 (SEQ ID NO:9), Tx6.6 (SEQ ID NO:10), Tx6.5 (SEQ ID NO:11), Gm6.7 (SEQ ID NO: 12), Mr6.1 (SEQ ID NO: 13), Mr6.2 (SEQ ID NO:14) and Mr6.3 (SEQ ID NO:15) for use as agonists of neuronal pacemaker cation channels and to modulate slow inward cation channels in vertebrates.

There is insufficient guidance in the working examples to show that conopeptides of the formula of SEQ ID NO:1 can be used as agonists of neuronal pacemaker cation channels and to modulate slow inward cation channels in vertebrates.

McIntosh et al. (PTO-892, Reference U) teaches that biological activity of peptide toxins from cone snails is dependent upon highly conserved γ-carboxyglutamate residues within the peptide (In particular, page 14343, first paragraph).

Carboxyglutamate residues appear to function as calcium ligands within proteins and the neurological action of the toxin depends upon calcium binding (In particular, page 14346, first and second full paragraphs). Chandler et al. (PTO-892, Reference V, abstract in particular) teaches that polypeptides from cone snail venom have

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antagonistic properties to N-methyl-D-aspartate (NMDA) that is dependent upon highly conserved γ-carboxyglutamate residues within the peptide.

Therefore, the functional polypeptide species of conopeptides of the formula of SEQ ID NO:1 are highly unpredictable. The large number of species represented by the formula of SEQ ID NO:1 encompass many inoperative species as evidence by the state of the art and the importance of particular residues within the conopeptide that retain neurostimulatory activity.

In addition, the specification gives no guidance as to what amino acids and/ or peptides may be substituted for the variable Xaa₁ through Xaa₇ positions that will still reatin the desired functional characteristics. Further, the specification does not detail whether the amino acids may be only be naturally occurring or whether they may also be modified and retain function as agonists of neuronal pacemaker cation channels that can modulate the slow inward cation channels in vertebrates. The scope of enablement set forth in the specification is not commensurate in scope with the claims.

Reasonable correlation must exist between the scope of the claims and scope of the enablement set forth. In view on the quantity of experimentation necessary the limited working examples, the nature of the invention, the state of the prior art, the unpredictability of the art and the breadth of the claims, it would take undue trials and errors to practice the claimed invention.

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9. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant is in possession of: the substantially pure conopeptides PnVIIA (SEQ ID NO: 6), Tx6.4 (SEQ ID NO: 7), Tx6.9 (SEQ ID NO: 8), Tx6.6 (SEQ ID NO:10), Gm6.7 (SEQ ID NO: 12), Mr6.1 (SEQ ID NO: 13), Mr6.2 (SEQ ID NO:14) and Mr6.3 (SEQ ID NO:15).

Applicant is not in possession of a substantially pure conopeptide or pharmaceutically acceptable salt thereof, said conopeptide having the general formula I: Xaa₁-Cys-Xaa₂-Cys-Xaa₃-Xaa₄-Cys-Cys-Xaa₅-Cys-Xaa₆-Cys-Xaa₇ (SEQ ID NO:1), wherein Xaa₁ is des-Xaa₁ or a peptide having 1-6 amino acids; Xaa₂ is a peptide having 5-6 amino acids; Xaa₃ is a peptide having 4 amino acids; Xaa₄ is Glu, γ-carboxyglutamic acid (γ - Glu) or Gln; Xaa₅ is a peptide having 3-4 amino acids; Xaa₆ is a peptide having 3-6 amino acids; and Xaa₇ is des-Xaa₇ or a peptide having 2-9 amino acids, with the proviso that when Xaa₁ is des-Xaa₁, then Xaa₅ is not the tripeptide Ser-Asp-Asn of claim 1; wherein Xaa₄ is γ - Glu of claim 2; wherein Xaa₁ is des-Xaa₁ of claim 3; wherein Xaa₁ is a peptide having 1-6 amino acids of claim 4; wherein Xaa₇ is des-Xaa₇ of claim 5 and wherein Xaa₇ is a peptide having 2-9 amino acids.

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Applicant has disclosed only conopeptides PnVIIA (SEO ID NO: 6), Tx6.4 (SEO ID NO: 7), Tx6.9 (SEQ ID NO: 8), Tx6.6 (SEQ ID NO:10), Gm6.7 (SEQ ID NO: 12), Mr6.1 (SEQ ID NO: 13), Mr6.2 (SEQ ID NO:14) and Mr6.3 (SEQ ID NO:15); therefore, the skilled artisan cannot envision all the contemplated polypeptide possibilities recited in the instant claims. Consequently, conception cannot be achieved until a representative description of the structural and functional properties of the claimed invention has occurred, regardless of the complexity or simplicity of the method. Adequate written description requires more than a mere statement that it is part of the invention. See Fiers v. Revel, 25 USPO2d 1601, 1606 (CAFC1993). The Guidelines for the Examination of Patent Application Under the 35 U.S.C.112, ¶ 1"Written Description" Requirement make clear that the written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species disclosure of relevant, identifying characteristics, i.e., structure or other physical and or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the genus (Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 20001, see especially page 1106 3rd column).

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the written description inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons

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of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See <u>Vas-Cath</u> at page 1116.). Consequently, Applicant was not in possession of the instant claimed invention. See <u>University of California v. Eli Lilly and Co.</u> 43 USPQ2d 1398.

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Applicant is directed to the final Guidelines for the Examination of Patent Applications
Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 66, No.
4, pages 1099-1111, Friday January 5, 2001.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1, 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Eldridge et al. (IDS filed on 08/26/2003).

Eldridge et al. teaches the peptide A(Xaa₁ peptide of 1-6 amino acids) -C-AETGAV(Xaa₂ peptide of 5-6 amino acids)-C-VHND(Xaa₃ peptide of 4 amino acids)-E(Glu)-C-C-SGA(Xaa₅ peptide of 3-4 amino acids)-C-SPIFNY(Xaa₆ peptide having 3-6 amino acids)-C-LPQ(Xaa₇ peptide having 2-9 amino acids) in Figure 2. In the peptide,

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Xaa₁ is a peptide having 1-6 amino acids as recited in claim 4 and Xaa₇ is a peptide having 2-9 amino acids as recited in claim 6.

The reference teachings anticipate the claimed invention.

12. Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 95/01436 (PTO-892, Reference N, SEQ ID NO:10 on page 46).

WO 95/01436 teaches the peptide (Xaa₁ is des-Xaa₁) -C-KTYSKY (Xaa₂ peptide of 5-6 amino acids)-C-XADS(Xaa₃ peptide of 4 amino acids)-X(Glu, γ - Glu or Gln)-C-C-TXQ(Xaa₅ peptide of 3-4 amino acids)-C-VRSY(Xaa₆ peptide having 3-6 amino acids)-C-TLF(Xaa₇ peptide having 2-9 amino acids) in SEQ ID NO:10 on page 46 and in claim 18. In the peptide, Xaa₁ is des-Xaa₁ as recited in claim 3 and Xaa₅ is not Ser-Asp-Asn as recited in claim 1. Xaa₄ is any amino acid including Glu, γ - Glu or Gln as recited in claim 2. Xaa₇ is a peptide having 2-9 amino acids as recited in claim 6

The reference teachings anticipate the claimed invention.

13. Claims 1, 3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 94/10196 (PTO-892, Reference W, SEQ ID NO:3).

WO 94/10196 teaches the peptide (Xaa₁ is des-Xaa₁) -C-AEFQSK (Xaa₂ peptide of 5-6 amino acids)-C-KKDS(Xaa₃ peptide of 4 amino acids)-E(Glu)-C-C-GTLE(Xaa₅

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peptide of 3-4 amino acids)-C-SPTWKW(Xaa₆ peptide having 3-6 amino acids)-C-VYPSPF(Xaa₇ peptide having 2-9 amino acids) in SEQ ID NO:3 on page 19 and in claim 1 on page 24. In the peptide, Xaa₁ is des-Xaa₁ as recited in claim 3 and Xaa₅ is not Ser-Asp-Asn as recited in claim 1. Xaa₇ is a peptide having 2-9 amino acids as recited in claim 7.

The reference teachings anticipate the claimed invention.

14. Claims 1 and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Ahrens et al. (PTO-892, Reference X).

Ahrens et al. teaches the peptide MGVKSALFIMAVFAAANV-QYVLAA(Xaa₁ peptide of 1-6 amino acids) -C-AETGAV(Xaa₂ peptide of 5-6 amino acids)-C-VHSD(Xaa₃ peptide of 4 amino acids)-E(Glu)-C-C-SGA(Xaa₅ peptide of 3-4 amino acids)-C-SPVFNY(Xaa₆ peptide having 3-6 amino acids)-C-(Xaa₇ is des- Xaa₇) in Figure 4 on page 389 sequence 'OpCtl-1'. In the peptide, Xaa₁ is a peptide having 1-6 amino acids as recited in claim 4 and Xaa₇ is a peptide having 2-9 amino acids as recited in claim 6. The conopeptide of Ahrens et al. is prior art because the term "having the general formula" is open language that includes the addition of other amino acids to the N and/or C terminus.

The reference teachings anticipate the claimed invention.

15. Claims 1 and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Liang et al. (PTO-892, Page 2, Reference U).

Liang et al. teaches the peptide A (Xaa₁ peptide of 1-6 amino acids) -C-KGVFDA (Xaa₂ peptide of 5-6 amino acids)-C-TPGKN(Xaa₃ peptide of 4 amino acids)-E(Glu)-C-C-PNRV(Xaa₅ peptide of 3-4 amino acids)-C-SDKHKW(Xaa₆ peptide having 3-6 amino acids)-C- KWKL(Xaa₇ is a peptide of 2-9 amino acids) in Figure 7 on page 977 sequence 'OpCtl-1'. In the peptide, Xaa₁ is a peptide having 1-6 amino acids as recited in claim 4 and Xaa₇ is a peptide having 2-9 amino acids as recited in claim 6.

The reference teachings anticipate the claimed invention.

16. Claims 1, 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Ayres et al. (PTO-892, Page 2, Reference V).

Ayres et al. teaches the peptide MQIKTVLLAFAMFAALNA-QHVLAA (Xaa₁ peptide of 1-6 amino acids) -C-AETGAV(Xaa₂ peptide of 5-6 amino acids)-C-VHND(Xaa₃ peptide of 4 amino acids)-E(Glu)-C-C-SGA(Xaa₅ peptide of 3-4 amino acids)-C-SPIFNY(Xaa₆ peptide having 3-6 amino acids)-C-LPQ(Xaa₇ peptide having 2-9 amino acids) in Figure 2. In the peptide, Xaa₁ is a peptide having 1-6 amino acids as recited in claim 4 and Xaa₇ is a peptide having 2-9 amino acids as recited in claim 6. The conopeptide of Ayres et al. is prior art because the term "having the general

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formula" is open language that includes the addition of other amino acids to the N and/or C terminus.

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The reference teachings anticipate the claimed invention.

17. No claim is allowed.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nora M. Rooney whose telephone number is (571) 272-9937. The examiner can normally be reached Monday through Friday from 8:30 am to 5:00 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 3, 2007

Nora M. Rooney, M.S., J.D.

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Patent Examiner

Technology Center 1600

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Double patenting I having I be rejection